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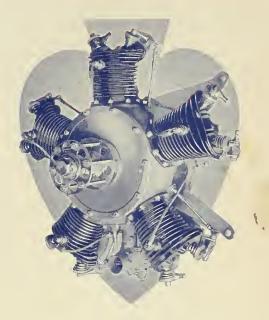






Lampert Calls Situation Dangerous CONSPIRACY AGAINST OUR AIR DEVELOPMENT General Patrick's Report Ignored

## A MESSAGE TO AEROPLANE MANUFACTURERS



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# AIERO DIGEST

Vol. 8 No. 3

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Hamilton Maxwell, Inc., N. Y.

## CONGRESS STUDIES THE AIR

REALIZATION of the past and a vision of the future of aeronautics should cause us all to pause and consider. Twenty-five years ago some of the learned professors in our colleges and universities were positive that

heavier-than-air flying machines could never be realized, although the evidence of powered flight was all about them among the bird and insect life, and in spite of promising attempts at sustained flight by man as far back as 1896.

The Lampert Committee of the House of Representatives, appointed in May, 1924, diligently conducted its investigations and inquiries from that time until the 2nd of March, 1925. The records were printed and indexed during the adjournment of Congress, and a report was made to the Clerk of the House on December 14, 1925, during the present ses-

sion. I am proud to say that at no time has there been any political aspect to the work or deliberations of the members, and harmony has always prevailed among them. But one purpose was apparent, and that was to secure facts of value and to report constructively to Congress on aeronautics from the standpoint of the welfare of the country. Hon. Randolph Perkins is to be commended for his untiring efforts in the role of Chief Examiner to the Committee. In addition to Mr. Perkins and myself there were seven other members of Congress on this Committee.

These men realized the accomplishment of those who have had an industrial share in aviation; they also realized some of the things not accomplished and which must be accomplished in order to keep our country abreast of the combatant arts of other nations. No country is invulnerable to aeronautic attack; and the master minds dealing with aerial arts and undersea modes of travel have planned almost indescribable havoc to peaceful and placid communities which happen to be of strategical importance as traffic and industrial centers. Are we not to be prepared for such attacks?

William Mitchell foresees the necessity of thorough

By Florian H. Lampert, M. C.

Member from Wisconsin and Chairman of the House of Representatives Special Aircraft Committee



material preparation and training of personnel for our national defense. His testimony before the Lampert Committee was enlightening and constructive, but because of its directness caused uneasiness in army and navy circles. The proba-

bility of the trial of Brigadier General Mitchell was foreseen by members of the committee early in 1925 as is shown by questions and answers concerning court-martial, the 96th Article of War, privileges of witnesses, and other topics touched on in the hearings. But the court-martial will, I believe, have a profound effect for good, although it is to be regretted that any resentment should be shown as to constructive testimony before Congressional committees for such an attitude is a fundamental danger to our institutions.

Commercial aviation should be heartily fostered by Congress and the administra-

tion as a necessary function in trade and in national defense. In our highly organized economic system, time is an essential element. Modern aviation, unlike the telegraph, telephone, and the radio, is an actual instrumentality of commerce. The expedition in transit of real merchandise, the settlement of exchanges, and emergency relief are services to be rendered by it which will contribute enormously to the comfort of mankind to say nothing of the practical economies to be derived.

Effective military and naval aviation must, I believe, rely largely on financially sound commercial aviation, including trained personnel, both flying and ground, a thriving industry, and a well-organized air transportation system. Reliance on commercial aviation, independently financed and equipped, spells delay and perhaps danger, so that I believe Congress should provide adequately for the equipment of airways, landing fields, maps, the building of aircraft, and general assistance to all phases of commercial aeronautics.

The Government should cease competing with civilian industry in the construction of aircraft, engines and accessories if we are to expect commercial growth; and a program of encouragement should be adopted.

### AIR-HOT AND OTHERWISE

AJOR GENERAL
PATRICK, who despite the fact that he shares his surname with an Irish saint is a simon-pure American, has that curious and (in Washington) unusual type of mind which considers principally the nation's good. Therefore it is the official play to keep him on as Chief of the

Army Air Service, but never under any circumstances to accept any recommendation he may make.

Appointed Chief in October, 1921, because he obviously knew the game and therefore needed to be under constant observation, he has been reappointed since so that whatever he may say need not be considered seriously by the War Department. It is an unwritten rule of that great branch of Government, as at present constituted, that all experts must be ignored. It is especially a rule of the present Secretary of War. One can imagine that able and patriotic gentleman sitting in the pleasant office allotted to him by an admiring nation and ringing for his secretary.

"Has Patrick made some other recommendations?"

"Yessir," says the secretary.

"Good. You know what to do with them."

"Yessir. Wastebasket."

"Good. . . And now that that is well out of the way let us turn to consideration of the national defense. Have you selected the new manicure to serve the General Staff?"

"Yessir."

"Is she good-looking?"

"Peach."

"Righto. Raise her wages and tell the boys to keep their minds exactly where they long have been—on their finger nails."

"Yessir. Can I go home now? This is a hard day's work that you have given me."

"Yes, my boy, go home to sleep. I, too, am much fatigued. This matter of the national defense is very worrisome and wearing. I'll take a little nap myself."

General Patrick's recommendations, made to the President's Air Board, which so far has accomplished that which may be best expressed by the use of a large cipher, the rim of which has been carefully removed, have met the fate.

He directs attention to the fact that not one of his previous recommendations has been carried out, and commits himself to an increased Air Service; correction of unsatisfactory conditions with regard to commissioned personnel; legislation to stimulate the development of civilian aviation; an Air Corps in the Army with a status similar to that of the Marine Corps in the Navy; either separate Quartermaster and Signal units for the Air Service or sufficient increase in these Army units to make it unnecessary to assign Air Service men to them; such an increase in the Air Service as

Conspiracy Against Aviation
Born of Fear, Social Greed,
and Vicious Lobbying—
See What Happens to
General Patrick's Reports

### By Frank A. Tichenor

was recommended by the Lassiter Board; enough money to provide safe flying equipment for at least existing personnel; a separate air budget adequate housing for the members of the Air Service instead of the draught-ridden firetraps which at present make its personnel and their families miserable and imperil their lives; a sep-

arate promotion list and a general system of procurement, assignment, promotion, elimination and retirement, designed to provide for the special requirements of the service and its comparatively heavy casualty list; recognition of the importance of the Air Force and increase of its ratio under Air Service units; allotment of more warrant officers; increase in the number of flying cadets; no further reduction in civilian technical personnel; adoption of a definite building program to cover a period of years; allotment of funds to put into service new equipment as it is developed and standardized; training and other activities based upon the amounts of flying equipment and supplies available; increase of the output of special service schools, particularly the advanced and primary grades; removal of the attack group from Kelly Field, San Antonio, to Rockwell Field, San Diego; authorization of the projected Panama flight; conclusion of all training programs of tactical units with combined Air Force maneuvers; increase of allotments so that states wishing them may have training for additional National Guard squadrons; training of proportionately more territorial and fewer branch assignment officers; increase of allotments for the year's training of Reserve officers with tactical units; increase of the number of R.O.T.C. units; and suitable federal legislation for the proper control of commercial aeronautics.

In an endeavor to speak seriously of the ghastly joke which Washington officialdom has made of the nation's air business, may I comment on the fact that General Patrick presumably was first placed in his big job because he was the man to surely do something in it. May I add that if he had not proved to be the man to do it he should not have been renamed for it. He WAS renamed for it. Therefore is it not reasonable to suggest that the Powers That Be, who sometimes act as if they were the Powers That Ought Not To Be, might better help than hamper him? Otherwise, when the public knows the facts, the Powers That Be suddenly will become the Powers That Used To Be.

The situation is amazing. Every recommendation which the General makes is silently ignored; not one is even criticized.

A court-martial has inspected and condemned Col. Mitchell because he got too patriotic. Perhaps the General's last report offends because it recommends about what Mitchell did. Perchance it may be treason to

(Continued on page 166)



ACCURATE information on the total mileage of European airlines is difficult to obtain. In many of

By Archibald Black

Air Transport Engineer

the figures available for each of the nations a certain amount of duplication exists which greatly complicates any effort to determine the total for all Europe. For example, the entire mileage flown by an operating company of one nationality is often included without deductions in the figures for that nation. At the same time, a part of this mileage may also have been in-

cluded in the figures for certain other countries into which this company operated. The net result is that the grand total of all European reports will be appreciably greater than the true mileage. However, it must also be noted that, with the exception of the British reports, the mileage given as flown by civil operators is confined to regular transport services, thus eliminating a considerable mileage flown in other operations.

THE BRITISH AIR MIN-ISTRY REPORTS

The most authoritative reports available upon

Ministry. Relying largely upon the 1925 reports I have attempted to estimate the total mileage flown in Europe over a given twelve-month period. As all of the returns available did not cover identical periods it was necessary to select periods corresponding most closely. This point, however, affects the totals but slightly. In addition to the British official reports, those of Lt. J. P. Van Zandt (1924) and F. Britten Austin

and F. Britten Austin (1925) as well as some miscellaneous information were consulted in an effort to weed out the duplications previously referred to. This appeared to be a hopeless task so the table is presented as it is with the caution to readers that the total errs quite appreciably on the high side so far as air transport mileage figures are concerned.

commercial aviation throughout

the world are probably the An-

nual Reports of the British Air

THE LEADERSHIP OF FRANCE

France is, without question, the leading nation of the world in organized privately-operated a i r





The twin-motored Dutch Koolhoven air liner.

transport. (In total mileage flown, the United States exceeds any other country in the world.) It is very important to point out, however, that France is developing air transport lines almost solely for their military advantage,-a condition not the most conducive to true commercial development. The outstanding operator among the French firms may be considered to be the Compagnie Generale d'Entreprises Aeronautiques (better known over here as the Latecoere Company). This firm appears to have a better appreciation of the commercial value of air transport than most of the other operators. The Latecoere lines, running from Toulouse in France to North Africa, have recently been extended to Dakar on the West African coast. This termination is only temporary. Arrangements are now being made by which the trip may be continued from Dakar by fast steamer to Fernando de Noronha, an island off the Brazilian coast. At this point the trip will be continued south by airplane to Rio de Janeiro and, finally, to Buenos Aires. The Compagnie Internationale de Navigation Aerienne (until recently known as the Compagnie Franco-Roumaine) operates almost half way across Europe, its line running from Paris to Bucharest. This route was extended experimentally from Bucharest to Constantinople and Angora, but service has since been suspended on the extension. This company conducted a most noteworthy experiment by operating a night passenger service for a three-month period during 1924. In addition to the London-Paris service, so well known to Americans, and to the routes just mentioned, several other French lines are in operation. All of the French lines are liberally subsidized but the Latecoere Company gives considerable promise of becoming independent of the subsidy in the near future.

TWO BIG GROUPS COMBINE IN GERMANY Germany is covered with a network of air routes and

this whole system was almost (but not entirely) divided between the two great groups controlled by the Junkers Company and Deutscher Aero Lloyd. The routes were all heavily subsidized, as will be noted from a glance at the figures in the table. These two big groups have recently combined, the new company being called the Deutsch Luft Hansa A. G. During this combination all air transport in Germany was suspended. The new schedule of air service for 1926 is to begin April 1. Under the fusion plan a number of subsidiary companies are to be formed; it is proposed, also to place the construction and transportation departments on independent bases and make each pay for itself. Being restrained from the creation of a military air force, Germany has fallen back upon the policy of expending her efforts on the creation of a great national air transport system. The German groups are somewhat interlocked with Danish, Swedish and Russian operators and the longest German-influenced routes are operated under such joint control. Actually, most of the routes within Germany are quite short with the result that the published lists of German air routes create an impression somewhat in excess of real activity. It is most unfortunate that fully authoritative figures are not available on the total mileage flown by German operators. The estimate given in the table is considerably in excess of true performance on account of duplication of certain reports. As there appeared to be no way of untangling the various figures no recourse was left but to total them as they stood. Nevertheless, admitting the inaccuracy of the apparent mileage, it is evident that Germany in 1924 ranked second to France in European air transport mileage, certainly a marked improvement over her position in the previous year.

BRITISH INTERESTED IN COMMERCIAL ASPECT Great Britain has apparently been attracted to the

EUROPEAN AIR TRANSPORT 1924-1925 (Figures for one year, as nearly as possible comparable.)

NATIONALITY	MILES FLOWN IN	CIVIL AERONAUTICS
OF OPERATING	TRANSPORTATION	APPROPRIATIONS, IN-
COMPANIES.	SERVICE.	CLUDING SUBSIDIÉS.
Belgian	160, 000. *	\$ 264,000.
British	890, 000. **	\$ 1,715,000.
Czechoslovakian-	126, 400.	
French	2,249,000.—	\$ 6,320,000.
German	1,860,000.#	2,390,000.
Hungarian	225, 410.	
Netherlands-	482, 800	\$ 161,000.
Polish	124, 203,	
Soviet Russian	288,600	
Swedish	69,280. t	
Swiss	268,400. tt	_ \$ 9,630,
TOTAL FOR ALL	6744.000	figures omitted above
EUROPEAN LINES	6,744,093.	not available

For purposes of comparison it is interesting to note that the U. S. Air Mail Service flew 2,155,761 airplane miles in the same period, while the total U. S. A. airplane mileage (scheduled and unscheduled) was 3,077,899.

22.0.00.00, 2002

development of air routes largely on account of their advantages in commerce. While the military aspect has been kept in mind, it has not been conspicuous. Living up to their reputation as "a nation of salesmen" the British have apparently regarded air transport with favor more as a means of bringing their colonial markets closer than as a national defense auxiliary. Because of this greater freedom from the military viewpoint, the British air routes will be regarded by Americans with more interest than most other European lines. British air transport started immediately after the close of the war and made a bold (but most unsuccessful) attempt to stand upon its own feet. The result of this attempt is now history. Under the magic

spell of postwar optimism the whole world painted the future of aviation in the rosiest of colors. By far the vast majority acclaimed the day of air transport as "here." England was no exception. Calculating and careful business men though they usually are, the British went headlong a n d unsupported into commercial aviation while other nations worked out subsidy schemes. Where air transport spelled national defense to the French, it meant a new arm of commerce to the English. No matter what we may think about this troubled history of British air transport, we cannot but admire the motives that inspired its inception - extension

of commerce rather than for the purpose of warfare.

### FORCED TO ADOPT SUBSIDIES

The natural sequence of events forced a suspension of all British air transport for a short period. It was then definitely decided to adopt a subsidy system and some lines were brought into existence again. As matters now stand, the nation is committed to the support of air routes until such time as they are able to take care of themselves. At this time several British lines are in operation, notably the London-Paris-Zurich; London-Brussels-Cologne and London-Amsterdam-Berlin. The real interest of Great Britain, however, undoubtedly lies in the lines—some existing but most of them

still being planned—radiating to her farthest colonies or connecting those colonies with each other. Efforts are now being made to establish airline communication with India and plans are under consideration for the establishment of airship services connecting England with India and Australasia. Immediate plans call for the connection of Egypt and India by airplane and the part of this line running from Cairo to Bagdad is already in operation. Its extension from Bagdad to Karachi is expected to be consummated in the near future.

#### RUSSIA INTERESTED IN AIR TRANSPORT

The interest of the Russian Soviet Government in air transport, although having a military tinge, is worthy

of some special comment. Russia has been for several years in the class generally designated by mathematicians by the letter X,—an unknown quantity. She has certain features, notably long distances between her centers of urban population, which offer great possibilities for the development of air transport should she decide to continue upon this course. Thus the fact that the Soviet Government is definitely committed to the creation of an air transport s v s t e m makes Russian activities in this line of particular interest. According to reports there are in operation at present, l i n e s connecting Nijni Novgorod, Moscow and Khar-



Modern European air liners—(top), the four-engined Farman; (center), the De Havilland; (bottom), the twin-engined Vickers Vanguard.

koff with Kieff, Odessa and Simferopol. These routes now connect at Moscow with the German-Russian line from Königsberg and plans are understood to be under way for the creation of a system of air routes. Just how far these plans will be carried into execution is something which only the future can determine. At the present time the Soviet Government seems to have established some community of interest with certain German constructors and operators of aircraft which may become of greater importance in the future. One thing seems certain, the developments in Russian air transport should be worth watching closely.

(Concluded on page 170)

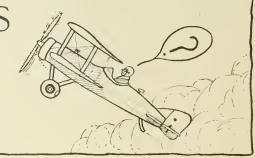
## WINGED WORDS

LESSON No. 3

A Not-too-Serious Explanation of Aerial Parlance
By

Capt. Townsend Scott

Illustrated by the Author

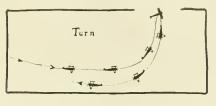


STUNTS are useless and foolhardy unless done for training purposes in planes especially adapted for them. Much harm has been done to aviation in general by useless accidents resulting from trying to do stunts in obsolete planes. The so-called "gipsy" flyers, such as can be seen at state fairs, usually thrill their rustic audiences by doing stunts in some old crate which should have been junked for lo, these many years. Such boobs frequently come to grief, much to the delectation of the onlookers who have been getting their tonsils sunburnt watching them in hopes that "something" would happen. Stunts are forbidden at many fields.

LOOP: Just plain loop as on the "loop-the-loop."

ROLL: To turn over and over sideways.

TURN: A turn is sometimes called a n



Immelman, after the famous German pilot. The plane is pulled up as though to loop; just before stalling the rudder is put on, the plane topples over on its side and then noses down for a dive until it gets up flying speed again, when it can be leveled off.

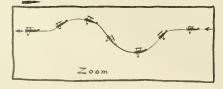
SPIN: When the plane is made to fall in such a manner that it rotates or spins while falling.

FLOP: Any unlevel or unusual flying is generally given the attractive name of a flop.

JAZZ RIDE: A pleasure ride, usually accompanied by a few flops and a stunt or two.

Zoom: When a plane is made to dive for a few seconds and then climb for a few seconds, the word to

express it is zoom. The zoom is quite frequently used as a signal of some



prearranged nature for aircraft working with them. Rock: Rocking the plane from side to side. Also generally used as a signal of some sort.

FLAT SPIN: Sometimes, but very seldom, a plane

will spin down without getting its nose down far enough to get up flying speed. The result is that the pilot has



little or no control over it until he can get it to dive. The flat spin is dangerous business and should be avoided by careful plane construction and testing.

There are other types of flat spins which are not quite so dangerous. When anyone practices the gentle art of talk-

ing about some subject of which he is in total ignorance or expounding theories of doubtful value, the flyer is very liable to describe the offending party as having been in a flat spin. Also, when anyone has imbibed of the cup that cheers and has looked upon the gin when it was white to such an extent that his knees are wabbly and his reasoning powers confused, this unlucky or lucky individual is described in a similar manner.

Low AND SLOW: Full many a kaydet is born to blush in private when he receives the lowing admonitions of his fond mama to be sure not to go up too high and not to fly too fast. At least nine out of ten pilots

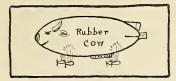
have been warned by their families to be sure to fly "low and slow." In the air, the only way to



keep control of the plane is to keep up flying speed, as has already been pointed out. Also, no matter what position the plane gets in, if it is high enough it can be brought into the correct position before touching the ground. Therefore, the safest place to fly is as high as you can get and the only way to keep control is to keep up plenty of speed. A short time ago one of the members of a well-known National Guard unit attended a flying meet in a neighboring state. An ex-air service newspaper reporter, endeavoring to be humorous, put in the papers an article saying that the peelo had won the contest for flying "low and slow." Several days later this peelo received a letter from the United States Senator from his district congratulating him upon his

victory in the contest and telling him how proud of him his entire state was. The letter was perfectly serious

and couched in the most complimentary terms, and the writer was totally unaware of the fact that his letter was about as sensible as if he had written to the Prince



of Wales congratulating him on winning a contest to see who could fall off a horse the oftenest.

Rubber Cow: Any aircraft which is kept up by means of gas, such as a balloon or a dirigible, is called a rubber cow.

HOTTER THAN AIR: The portion of the air service which has to do with aircraft kept aloft by being made lighter than the surrounding atmosphere through the



use of gas is called "lighter than air" as distinguished from those who fly any sort of contrivance which is heavier than air. The playful term for this branch of the service is "hotter than air," and they are the boys who ride the rubber cows.

WASH-OUT: Anything that has been rendered useless, or

anyone who becomes physically or mentally under par, may be said to have been washed out. Anyone or anything that is boring to the mind is a wash-out, particularly if of a sanctimonious nature. The wash-out is close to the flat tire of non-aerial language, though it covers more ground.

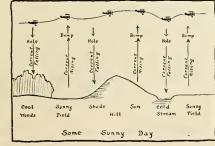
Nose-Over: When a plane is upset head-first on the ground so that it turns over on its back, it is said to have been nosed-over.

CRACK-UP: When a plane is smashed it is cracked up. This generally implies that the only serious damage was to the plane and that nobody was hurt.

CRASH: A serious or somewhat serious accident is a crash. Fortunately there are many more crack-ups than there are crashes; in fact, there is hardly a peelo of any appreciable experience who has not been the chief actor in several crack-ups.

Ace: The real meaning of the word ace is a pilot who, during the war, shot down five or more enemy planes. The more affectionate meaning, however, is that of one who has cracked up five or more planes. The word is seldom used in the air service in its original

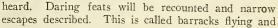
me a n i n g
and when
you hear a
bird spoken
of as "the
ace of the
squadron,"
or so me
s i m i l a r
term, it's a
s a f e b e t
that he has

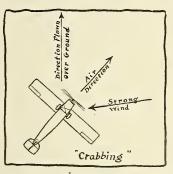


lately washed out a plane in a successful crack-up.

Fox-Hunting: This is the gentle sport of "stepping out" with the ladies. When the peelos get dressed up in "cits" or citizen's clothing, and leave the field, some bird is bound to say they are going fox-hunting.

Barracks Flying: When a bunch of kaydets get together in the barracks after dinner you can bet your life there will be more bunk spilled about what they are doing and can do than ever before was





is the pet sport of the novice. The only way to end the session is for someone to yell, "Aw, put the ships in the hangar."

Sock

and

Sock-

Pole

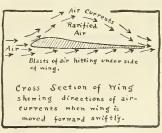
SOCK: A hollow tube of muslin, large at one end and small at the other. This is hung on a pole in a conspicuous posi-

tion on the flying field and indicates the wind direction, assisting the peelo to head into the wind.

TAKE-OFF: When the plane runs along the ground getting up flying speed and then leaves the ground, it is said to be taking off.

CROSS-WIND: Flying speed refers to the speed of the plane through the air. Therefore, if the wind is

moving over the ground, the plane on the ground already has some air speed. When the plane starts off it should be headed into the wind to take advantage of the air speed created by the wind. In landing, the plane



should land against the wind, as the wind will help to slow it up as it rolls over the ground. When the pilot lands his ship or takes off at an angle to the wind direction he is going "cross-wind," and a good puff of air is liable to upset his ship.

Crabbing: When flying the wind is sometimes strong enough to cause the pilot to head somewhat into it in order to fly toward his destination. The result is that the plane moves forward in a sidewise position. This is called crabbing.

PUFFY: When sudden gusts of wind are disturbing the air, the atmosphere is said to be puffy. The effect on the plane is like a choppy sea to a boat.

(Continued on page 169)

## THE FLIGHT SURGEON

T WO air liners are leaving the New York airport at midnight, Chicago-bound. With the expected luck they will arrive in time for their fifty passengers each to have an early

breakfast in the mid-western metropolis, and accomplish a day's business without the loss of a business day. Now, to all appearances to the casual observer, these two liners are substantially the same. They have approximately the same equipment, and each looks ship-shape and air-worthy.

There is a substantial difference, however. In one case there has been a most rigid inspection of every vital part of the mechanism. Experts, several in number, have crawled in over, around and atop the big thing, and not a spark-plug, distributor, water or gas connection, turn-buckle, or control unit has escaped the most careful scrutiny. Substitutions are made where there is only the slight-

est suggestion of weakness or flaw. The motors are run up under load, instruments are checked against standards, and even a preliminary hop is made out over the bay without passengers, as a final measure of precaution. Nothing in this uncertain world is more nearly certain than that this amazing thing will function perfectly over the entire route to its destination. The attention the pilot receives consists of a genial "How goes it, Joe?" from one of the functionaries in attendance. "Ship-shape," comes back the reply and he climbs up and sends down the signal to take off.

Now, for the sake of the story, let us assume that the grooming accorded the second ship is much more in the nature of a lick and a promise—and a hope. Somebody kicks a tire or two, and somebody else may look over the fuel and oil systems, but as for inspection, why this old bus has never been known to fail. While others make ready for the take-off, however, the pilot is over in the field-office in earnest consultation with the Flight Surgeon. Blood pressure is being studied in several different ways, vision is being checked, equilibrium is looked after, examination is made of his recent flying time, the type of landings he has been making, questions are asked as to the amount and kind of exercise he has recently had, investigation is made regarding his recent dissipations, if any, and without his knowledge a psychological study is being made by a Flight Surgeon who knows him intimately, as to the

By
Arthur LaRoe, M.D.

Captain, Medical Officers Reserve Corps



mood he chances to be in at the moment. He is receiving fully as careful a going over as is the ship itself in the other case. This is both physical and mental, and in addition refers to his

personality make-up as well. All things checking up correctly he is cleared from the F 1 i g h t Surgeon's office, emerges with a confidant smile, mounts to his cabin, quickly feels his controls, and signals away the chocks. Now, in this same uncertain world, nothing is more nearly certain than that this pilot is going to be able to go his half of that long journey calm, cool, and unerring in judgment.

Now further, for the sake of the story, let us assume that even with the most excellent meteorological services that a beneficent government can bestow, the veather is nothing to be particularly happy about. Reports are bad from the north and west. Winds are ad-

verse, fog covers a part of the course, and horizontal visibility is given as "fair." Now, there is an extra place in each of these ships, and my good reader is to decide for himself in which he will make his booking. He must make the decision whether he would rather chance it with a perfect ship and a pilot who is possibly stale, worn-out, dissipated, and lacking in confidence, or with a ship that is possibly not in order but with a pilot whose wits are sharp and judgment keen and unerring.

Of course, when we come to the day of fifty-passenger liners we will have both rigid mechanical inspections and careful examinations of pilots by competent Flight Surgeons. And the reader may confidently make his selection of ship by the color scheme or the internal fittings. Planes will be safer than the flyers on rails. But the purpose of this article is to call attention to the extreme importance of the supervision of personnel by competent Flight Surgeons. At present this service is available only to the military services. It soon will become necessary in commercial flying.

What is a Flight Surgeon? What are his functions, and where does he take his "degree"? These should be interesting questions to anyone who is interested in the advancement of aviation. Another interesting question would be—why is a Flight Surgeon?

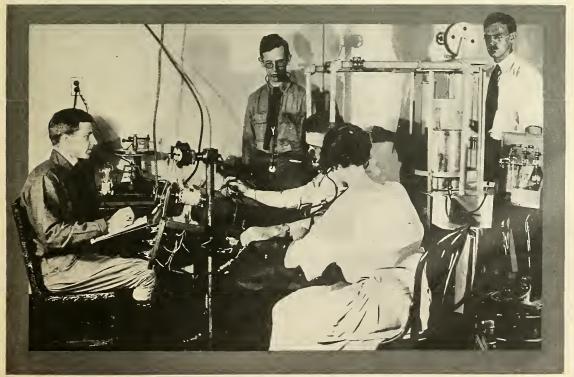
In a study of several thousand air casualties in the late period of the recent war, the Royal Air Force

(British) determined that 2 per cent were caused by enemy gunfire, 8 per cent by mechanical failure of motor or plane, and 90 per cent by failure of the human factor. Of these last, about 75 or 80 per cent were psychological or mental failures, rather than purely physical ones. In other words when we carefully inspect the ship and neglect the pilot we are guarding effectively against about 8 per cent of the chances, and leaving the other 92 per cent to fate. The enemy gunfire does not concern us in civilian flying, and probably now with perfections in design and equipment the 8 per cent would be reduced considerably and the proportions changed to the disadvantage of the human factor. The public press often reports something like this: 'No one on the field can account for the occurrence of this accident, as the pilot was one of long experience, and considered one of the best. Something must have gone wrong with his machine.' If by this is meant the human machine, then in about 92 times in a hundred it is correct. This answers the question 'why?

A Flight Surgeon is first of all a physician. He ought to be at least a little above the average in his groundwork in the fundamental studies of physiology with particular reference to the functions of the heart, respiration, and nerve system. Then in addition he has made a special study of those problems that are unique in the man who flies—such as vision, equilibrium, chemistry of the blood stream and its changes under flying conditions, the effect of altitude on the blood pressure, heart action, and respiration, the early evidences of

staleness, fatigue, or unfitness, the speed of nerve response or reaction-time, and the personal "make-up" or individual qualifications for flying from a psychological standpoint. He must be interested in flying, he must admire the man who flies, and in the writer's own opinion he should be able to fly himself—at least with a "junior" rating. He must know intimately the men in his care, associate with them constantly, play their games with them, fly with them, know their every mood and fancy. It will be seen that he is no just ordinary practitioner of medicine. He is a specialist if ever there was one. And his specialty is to be learned in no medical school and in no post-graduate hospital.

In the writer's long experience with the Army and things military and even including a year in the French Army before America entered the recent war, by long odds the most efficient, complete and most nearly perfect piece of work he has come across is the Army's School of Aviation Medicine being conducted at Mitchel Field, L. I., at present under the command of Major Francis H. Poole, M. C. This school is running three classes yearly consisting of Regular Army Medical Officers, National Guard Medical Officers, Reserve Medical Officers, and Medical Officers of the Navy. It is, at present, the only course in the world for Flight Surgeons. the only place on the globe where a physician may go to take up this most interesting specialty. The course given consists of lectures, laboratory experiments, actual practice with aviators, and clinics in New York City hospitals. It covers all the points mentioned above.



The pilot undergoes a rigid test every few months to determine the effect of altitude on the blood pressure, heart action, respiration, speed of nerve response and other special tests to determine his fitness for flying.

## STOP -- LO

### OUR NEW LS-FIVE PASSENGER NOW READY FOR DELIVERY

The New Lincoln Standard TYPE LS is the most practical and efficient airplane in America today for the money.

Excerpts from letters received from some of the purchasers of our LS5 commercial plane:

"I want to compliment you on the LS5 plane finished red that you have just delivered to us. I consider it the best looking plane I have ever seen and I have never seen better workmanship or finish. The finish itself compares favorably with high priced automobile work. Both Mr. Coburn and myself are very much pleased."

—Signed, J. V. C. Gregory, Chief Pilot, The Aerophoto Company, 444 Lathrop Bldg., Kansas City, Mo.



"It might please you to know we have used the new L-S-5 a great deal in the past month, and Mr. Lees, Jimmy and myself like it very much. The biggest surprise is how it does it so well with a 150 HP motor. We have had many favorable comments on the looks of this machine and are very well pleased."

-Signed, E. A. Johnson, Johnson Airplane & Supply Co., Dayton, Ohio.



"I want to compliment you and your organization in bringing out this job; it is indeed a credit and should go a great ways toward filling the need of a ship with minimum power and operating expense plus maximum useful load."

—Signed—R. W. Schroeder, Underwriters' Laboratories, Chicago, Ill.



THE above photograph shows the two LS5's which left Lincoln, Nebr. on November 26, 1925 on America's first Aviation Booster trip. Picture taken at Austin, Texas, after travelling more than 5000 miles and carrying nearly 3000 pas-

Remember We Can Make

Lincoln Standard Aircraft Co.,

## K -- LISTEN

\$2875. F. O. B. LINCOLN FLYING FIELD \$2875.

The guarantee delivery on the Lincoln Field, ship tested and ready to fly away 24 hours after receipt of order.



sengers including officers of various commercial and civic clubs along the entire route.

The LS5 excels because of the slow landing speed and ample power to get in and out of small landing fields with full load.

Here are two more excerpts from the many letters which we have received from pilots in various parts of the United States in praise of the LS5 commercial plane:

"Both Mr. Robinson and myself congratulate ourselves for obtaining the Five Seater Lincoln Standard from you. On Labor Day at the Fair at Libertyville, Illinois, we carried 90 passengers between 11:45 and 6:30, taking a full load off a difficult piece of ground with no effort at all. The plane picks up marvelously and gets off with a short run, climbing rapidly on the hottest day."

—Signed—J. A. Yonge, Capt. R. A. F., Great Lakes Aviation Co., Lake Forrest, Ill.



"To say that we are more than pleased with the performance of this ship puts it very mildly. We have had six grown people besides the pilot in this ship at once and notwithstanding that it was designed for four passengers, we couldn't notice any difference in the way it left the ground and handled in the air. This ship responds quicker and easier to the controls than any we have ever used during our five and a half years' experience."

—Signed — L. C. Kesterson, Commercial Flying Co., Omaha, Nebr.

mmediate Deliveries!

incoln, Nebraska



THE range of commercial uses to which the Buhl-Verville Airster can be adapted with its various pay loads and power plant combinations, characterizes this craft as a general utility or general aerial service plane.

Several of these planes are now being built with Wright Whirlwind and OX5 engines to be used as models for Feeder Mail Lines, insecticide dusting, pilot training, photographic work, light cargo and passenger carrying. The present flying activities are being carried out at Packard Field, Detroit, where the machine has been thoroughly tried out and enthusiastically received by various pilots.

This craft is designed with a degree of ruggedness and strength compatible with the demands for the different types of air service in which it may be used, and, by simple changes effected in the detachable engine mount and cowling, for the installation of any American aircraft power plant between 100 and 200 horse power.

The first flight model illustrated here is powered with a 90 h.p. OX5 engine supported on a sturdy, accessible engine mounting and surrounded with quick detachable cowlings. This affords ease of maintenance and ready interchangeability in the field, due to the detachable engine mount.

Streamlined exhaust stacks lead the burnt gases from the engine to the under side of the lower wing stubs. This shields the passengers from unpleasant gases and also tends to muffle the noise from the exhaust.

A readily accessible hand fire extinguisher is carried on the outside of the fuselage at the pilot's cockpit.

A gasoline level gauge is mounted ahead of the passengers' compartment where it is visible to the pilot. Gasoline shut-off controls and radiator shutter adjustments are provided in the pilot's cockpit.

A gasoline tank having a capacity of 40 gallons and sufficient for five hours' flight, is situated immediately back of the engine and ahead of the passenger compartment. The gasoline system is of the gravity feed type. Oil in the OX5 model is carried in the bottom half of the motor crank case. The radiator is of the underslung type provided with shutters which are manually operated in flight. The metal propeller is of the Reed duralumin type.

Only one set of wing struts is employed in the interplane trussing system. These struts, of streamlined steel tube, are of the N type welded into single units

which do away with incidence cables. The ends are adjustable for varying the incidence of the wings.

Both upper and lower wing panels are interchangeable, and hinged with fittings designed to allow the folding back of the wings at the field in order to facilitate storage. The airplane can be housed in a hangar space approximately 9 feet high by 131/2 feet wide by 25 feet deep. These wings can be folded back in approximately 12 to 15 minutes. The span of the machine with wings extended to their full width is 35 feet. When used for shipboard reconnoissance, the folding wing feature would be of considerable advantage for storage on board ship. It might also be used in an emergency forced landing when necessary for the pilot to have the ship towed to a larger field to take off again. In this case, the wings can be folded back without the loss of time and hazard of damage entailed as in the usual case where the wings are completely removed and again rigged up in the field, often without proper means of gauging the incidence and general alignment of the ship.

The fuselage is of tubular steel construction, welded into an integral structure without wires or fitting braces. This feature does away with the necessity of rigging and truing up in the field. Steel tube construction adapts itself very well for repairs in the field, as any welding can be carried out with an Oxo Acetylene torch. The tubing used is of ordinary commercial size and the grade of steel used is readily obtainable in the open market.

Two cockpits are provided in the fuselage—the aft cockpit which is used by the pilot and the front cockpit for the passengers. Immediately ahead of the pilot's cockpit is a small tool and baggage compartment. The passenger cockpit is 35 inches wide, which allows comfortable seating arrangement for two people sitting side by side. For conversion to a cargo plane or insecticide plane, the seats in the front cockpit can be removed thus making provision for a cockpit capacity of approximately 23 cubic feet in volume. Entrance to and egress from the passenger compartment is facilitated by a hinged door on the left side. The air controls are of the dual stick and rudder bar type although this is optional, depending upon whether the plane is used for training or cargo purposes. Attached to the rudder bar are two sets of cables; besides the customary set extending back to the rudder mast for rudder control, an additional set runs to the tail skid column to assist steering on the ground while taxiing.

The pilot's instrument board is equipped with an air speed indicator, clock, altimeter, oil pressure gauge, radiator thermometer, switch and carburetor choke adjustments. A parachute seat is fitted for the pilot, and the front cockpit may be provided with parachutes as optional equipment.

The empennage or tail surfaces are of welded steel tube skeleton, fabric covered. The elevators are identical with the rudder. The stabilizer is made up in two triangular halves, bolted and braced on each side of the fuselage and provided with incidence adjustment which can be effected on the ground. Special adjustment is provided for the fin to counteract for propeller torque reaction. The stabilizer is braced on its under side to the bottom fuselage longeron with two streamline tubes, and from the top of the stabilizer to the upper extremity of the fin post, two streamline wire braces are provided.

A large quickly detachable metal inspection door is provided in the aft end of the fuselage to facilitate inspection of the tail skid shock absorber cord, etc.

One of the features of this plane is the wide track axleless landing gear. This is provided to reduce the resistance offered in the ordinary axle type in taking off from fields with heavy growths. It also minimizes the possibility of hitting the lower wing tip. Shock absorbers are of the Oleo rubber disc type. Under loading conditions, these rubber discs act in compression and an internal perforated plunger piston simultaneously travels into a loaded oil chamber at the lower end of the strut. This absorbs the impact energy and neutralizes the effect of the rebound, thereby effectively cushioning the landing shocks.

Wheels are neatly faired with pressed metal discs instead of the usual fabric covering.

The principal characteristics of the Airster are as follows:

Dimensions—over-all height, 9 feet; span, 35 feet; length, 25 feet; over-all width with wings folded, 13 feet 6 inches.

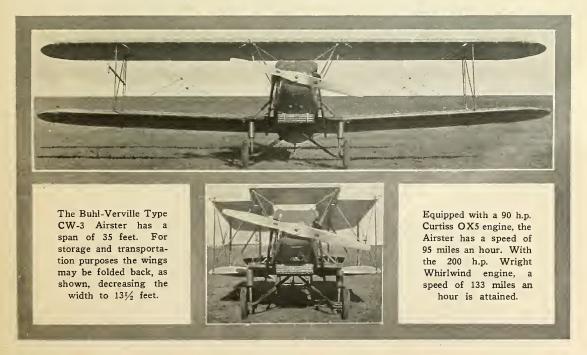
Areas (in square feet)—wings, 300; stabilizer, 21; ailerons, 28; elevators, 16.5; rudder, 8.5; fin, 5.75.

Weights and performances with OX5 installation—weight, empty, 1380 pounds; weight, fully loaded, 2150 pounds; endurance at full throttle, 5 hours; high speed, 95 miles an hour; low speed, 40 miles an hour; disposable load or useful load, 770 pounds.

Weights and performances with Wright Whirlwind 200 h.p. installation—weight, empty, 1415 pounds; weight, fully loaded, 2300 pounds; endurance at full throttle, 3 hours 30 minutes; high speed, 133 miles an hour; low speed, 45 miles an hour; rate of climb at the ground, 900 feet per minute; disposable load or useful load, 885 pounds.

This machine incorporates the advantages of high factors of safety, and meets the requirements for U. S. Army training planes and of the Aeronautical Safety Code. The load factor requirements for which the machine was designed are as follows: for high incidence, 8: low incidence, 5.5; inverted flight, 3.5; landing condition, 7; ribs in condition of medium incidence, 6.75. Height of free drop for shock absorbing unit and for landing gear, 26 inches. Load in pounds per square foot of ailerons and horizontal tail surfaces, 35 pounds per square foot; vertical tail surfaces, 30 pounds per square foot.

All the design conditions, stress analyses and specifications mentioned above conform to the rules of U. S. Army Air Service Hand Book of Instructions for Airplane Designers.



## THE SUPER RHONE ENGINE

THE Super Rhone engine, a nine-cylinder fixed radial air-cooled aircraft engine, rates 120 horse-power at a normal speed of 1400 r.p.m. Its weight

complete is 340 pounds.

Using the 80 horsepower American made LeRhone rotary type engine as a basis, the Super Rhone radial engine is being produced for commercial aircraft uses by Tips & Smith, Inc., of Houston, Texas, after two years' work on the part of the designer of the conversion, Mr. Charles E. Quick, and his associates. The past year has been utilized in practical flying tests, as well as thorough block-tests. The Super Rhone Engine & Flying Corporation successfully used the engine in its cotton dusting operations in Texas during the past season, and have contracted for a fleet of ten planes with the Super Rhone for next season's work. The engine is being manufactured under an exclusive license given to Tips & Smith by Mr. Quick,

The Rhone rotary engine was built by the Union Switch & Signal Co., Pittsburgh, Pa., at a cost of \$4,250 each to the War Department, under a large contract. No better example of mechanical craftsmanship than was employed in the construction of this engine is available. Practically the entire war surplus of the LeRhone was purchased by the Tips & Smith Company.

On a recent cross-country cotton dusting demonstration flight. one of the Super Rhone equipped Standards carrying a load of over 700 lbs., including pilot, cruised at 75 miles per hour at 1,375 r.p.m. and consumed but 92 gal. of commercial gasoline and 9 gal. of mineral o i l in 12½ hours' actual fly-

in g, averaging about  $7\frac{1}{3}$  gallons of gasoline per hour. This performance is particularly noteworthy in this obsolete type of plane.

During the season just closed, over 6,000 acres of cotton were dusted with Super Rhone Standards, using an average of 8½ lbs. of calcium arsenate per acre. The saving in the arsenate employed over the old method of application was sufficient to pay for the cost of the airplane application, and in one closely controlled area of 400 acres the yield was increased 75 bales over previous years when ground-treated.

The Super Rhone engine, in its development stage, was perfected under these trying flying conditions: wide

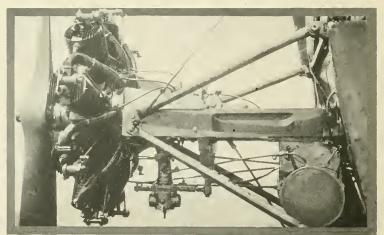
open, with 500 lbs. of poison, altitude under 10 feet, with hard zooms at the row's ends. Maintenance costs are low. The saving of weight by eliminating the radiator and water circulating systems, permits carrying a greater pay load, and removes a cause of frequent trouble and consequent forced landings. The absence of the radiator reduces head-resistance, giving greater speed, greater ease of handling and maneuverability, and higher performance.

The matter of cooling radial type air-cooled engines, due to the structural nature of this type, has been a great obstacle in their development. In the Super Rhone engine this has been overcome by a process which admits fresh air to the crank case under atmospheric pressure and which forces with each revolution a complete change of air within the crankcase. Thus, excessive accumulation of heat at the center is eliminated. This tends, also, by regulation of temperature, to reduce oil consumption, and prepares the explosive gasses for efficient combustion.

The engine mounting, into which is built the intake manifold and which carries the carburetor, is one of the novel features of this engine. It is a clean casting of crankcase aluminum, weighing about 24 pounds.

The crankshaft is counter-balanced, and vibration is

reduced to a minimum. The balancing is done by rigidly fastening one weight to the large (propeller) end, and the small end of the shaft is cast with the weight integral. The short end of the shaft is a specially heattreated casting, machined to fit the taper on the large end, and extending to the rear; on it is mounted the dis-



Installation of the Super Rhone in a Standard J1 plane.

tributor. It drives the magneto and oil pumps with tachometer-attaching shaft and housing, as well as a return oil pump.

A double thrust ball race is fitted, which enables it to be used as tractor or pusher.

The specifications of the engine are: length over all, 36 inches; diameter over all, 36 inches; bore, 4.13 inches (105 m/m); stroke, 5.51 inches (140 m/m); piston displacement, 667 cubic inches; compression ratio, 4.8; firing order, 1-3-5-7-9-2-4-6-8; diameter of inlet and exhaust valves, 18 inches; lift of inlet and exhaust valves, 13/32 inches; ignition, magneto, fixed spark; magneto is of clockwise rotation 2½ times engine speed.



IR Forest Fire Patrol, District 1, comprises a heavily forested and mountainous area about 200 miles long and 150 miles wide, divided into twelve national forests covering part of Washing-

ton, Idaho and Montana, with District headquarters at Missoula, Montana, and the air patrol base located at Spokane, Washington.

The Patrol was originally started in this district with two planes, two pilots and three mechanics. After three weeks of work an additional plane, pilot and one mechanic were included. Patrolling started July 1, 1925, and ended Oct. 1, 1925. Approximately 700 hours was flown by these three planes and pilots without mishap or breakage of any kind, each plane averaging about 2½ hours per day.

After a few days of operation it was found advisable

to have a permanent observer assigned to the patrol to obtain the best results. Mr. Howard Flint, of the U. S. Forest Service, an experienced fire control expert as well as a capable observer and a man who knew practically every bit of the country, was assigned to the task.

Radio communication was not

### Bν Lieut, N. B. Mamer

In Charge of Spokane Base, Air Forest Fire Patrol, District I

contemplated as the Forest Service has an excellent system of communication by means of look-outs which are stationed at advantageous points every 20 or 25 miles throughout the entire district. These look-outs,

located on the highest points, have telephone communication with each forest headquarters. The pilots therefore send in their reports by flying low over the look-outs, and dropping messages in specially prepared message droppers.

The mere finding of forest fires is the easiest and least important thing that the district aerial forest patrol does. Contrary to the popular belief, the pilots and observers do not fly over a newly discovered smoke patch in the timber and then hurry to an observation post and report a fire, or send a radio message to headquarters. That would be simple. Aerial forest patrol

is far more complex. To understand how the twelve national forests in northeastern Washington, Idaho Western Montana were patrolled by airplanes flying out of the Spokane base it is necessary to know something of the elaborate system employed. Hit and miss tactics (Continued on page 170)

Lieuts. Priestly, Mamer and Freng-pilots of the Air Forest Fire Patrol, Dist. 1.



# ATERO DIGEST

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### THE CONSPIRACY AGAINST AIR EFFORT

AD those in charge of the policy of the National Aeronautic Association at its Washington head-quarters devoted more of their time to uncovering the important facts respecting the conspiracy against the Air Service on the part of the deeply entrenched ancient fighting forces, enabling us to bring this matter in an intelligent manner before the numerous air investigating committees that have held sway during the past eighteen months, and had they devoted less of this time to log-rolling to assure themselves reëlection to office, they would have accomplished something of importance to those throughout the country who are associated with them.

It is our humble warning expressed, too, with some timidity, that unless the members of the N. A. A. throughout the nation receive satisfactory assurance that it is the intention of the occupants of the Washington headquarters to carry out in full the purposes and duties that were entrusted to them when they were elected, another organization will spring up headed by some courageous, patriotic, red-blooded American who may not be able to qualify in the social register, but who will realize the importance of bringing before the American public the unvarnished truths pertaining to the unpatriotic and selfish causes that have retarded every movement destined to further air advancement.

We must have a civilian organization to act as a clearing house whence the truths of aviation may be circulated among the 110,000,000 citizens of the nation most of whom are waiting to be educated and, in turn, will see that proper representation, favorable to aeronautics, is sent from their respective Senate and Congressional districts. Then the camouflaging of aeronautical facts will stop. Aviation will be taken from the War and Navy Departments and put in the hands of those with knowledge, vision, experience and, above all, thorough and practical training in flying.

When this is done investigations will cease, all branches of aeronautics will progress and the unwarranted and extravagant expenditures of hundreds of millions of dollars in antiquated national defense measures now justified by precedence, but by nothing else will cease to be a threat against the future safety of our nation.

The doddering members of the General Staff will be driven from the soft and comfortable berths that they do not deserve but nevertheless occupy to their rightful place in the Old Soldiers' Home where, kept comfortable at the Government's expense in recognition of past services where they had not been left behind by

military progress, they will do little or no harm. Their places in the active services will be occupied by younger, more alert, more intelligent, more patriotic and more progressive men who will be interested in the new science that must be employed should we be so unfortunate as to again engage in warfare, which God forbid.

Only such younger and more progressive men will be qualified to prepare for the welfare of the generation to come so that we shall not be left in the unprepared condition which disgraced us at the outbreak of the last war and which cost us thousands of our youth that might and should have been spared.

### AIRCRAFT'S WAR EFFECTIVENESS

To those who prate about the "unproved value" of aircraft in warfare, we would suggest that they read Captain B. H. Liddell Hart's "Paris; or. The Future of War". It shows not only the havoc worked by aircraft in the World War among the fighting troops, but with civilian morale in those industrial centers which are as essential to military success as either the army or navy forces. We quote herewith:

"Witnesses of the earlier air attacks before our defence was organized will not be disposed to underestimate the panic and disturbance that would result from a concentrated blow dealt by a superior air fleet. Who that saw it will ever forget the nightly sight of the population of a great industrial and shipping town, such as Hull, streaming out into the fields on the first sound of the alarm signals? Women, children, babies in arms spending night after night huddled in sodden fields shivering under a bitter wintry sky—the exposure must have caused far more deaths than the bombs. . . .

"Of the crippling effect on industrial output, let the facts speak: In 1916, hostile aircraft approached the Cleveland district in thirteen different weeks—which reduced the year's output in that district 390,000 tons (of pig iron) or one-sixth of the annual output.

"Imagine for a moment that, of two centralized industrial nations at war, one possesses a superior air force, the other a superior army. Provided that the blow be sufficiently swift and powerful, there is no reason why within a few hours, or at most days from the commencement of hostilities, the nerve system of the country inferior in air power should not be paralysed. . . .

"Americans would do well to remember that the Japanese military leaders are disciples of Clausewitz, and that one of his axioms reads: 'A small state which is involved with a superior power, and foresees that each year its position will become worse', should, if it considers war inevitable, 'seize the time when the situation is furthest from the worst' and attack . . . and for the United States the next decade is the danger period."

We would particularly call this volume to the attention of our Secretaries of War and Navy, and would recommend that after they have read and digested it they pass it to those officials who have represented them at the recent air investigations.

## THE UNOFFICIAL OBSERVER

THERE seems to be a difference of opinion among those engaged in the development of American air transport as to whether passenger-carrying over scheduled routes should be attempted at this time. One group thinks

that flying is not yet safe enough to invite more than mail and express freight traffic; another, probably the smaller group, thinks that air transport offers comparative safety to all three classes.

Caution is an excellent thing in any enterprise, and in aviation intended to serve commerce it is better than recklessness, but it has never been the outstanding characteristic of the successful pioneer in any field.

Professor Joseph W. Roe, head of the Department of Industrial Engineering in New York University and director of the committee on civil aviation of the United States Department of Commerce and the American Engineering Council, has this to say:

"During the last twelve months for which accurate records are available 63,706 passengers were carried on regular air transport routes in Europe and 5,927,356 miles were flown. Twelve passengers were killed, or an average of 494,000 machine miles flown per fatality. The average number of passengers carried per machine flight for all European operations in 1925 was about 2.5. Hence the number of passenger air miles per passenger fatality was approximately 1,235,000."

There is no such thing as absolute safety. If you are interested in comparisons, look up the fatality records of automobile traffic and the railroads. As to inanimate freight, the Railway Mail Service loses more registered mail proportionately than does the Air Mail.

The air transport companies which tell the public that their planes are not safe enough to carry passengers are going to have a hard time getting pay loads of freight from that same public, which wants to be assured that its merchandise and mail has a reasonable chance of safe delivery on schedule.

Experienced operators of air lines say that the average passenger has a distinct value besides the revenue he brings. It is the value of word-of-mouth advertising, which transcends all other kinds. Air transport in the United States will not be a success until a great number of people are brought to believe from personal experience that it is relatively safe. This can best be accomplished by giving them an opportunity to fly.

Practically all of the airway enterprises of Europe are directed by men who began their careers in aviation as pilots. It is earnestly to be hoped that commercial aviation in the United States does not too completely come under the control of business executives timid about flying. They may have the business and financial talents that aviation certainly needs, but they will fail to inspire the public confidence that aviation needs more than anything else if it is to be a success.

Why Not Carry Passengers? New Mail Line Honors Smith Conflicting Air Legislation

### By John Goldstrom

It is my private guess that those who oppose passenger-carrying will find it forced upon them earlier than they expect. American air lines, having no governmental subsidies to draw upon, will be forced to find pay loads early in the game

or go quickly out of business. Informed investors will not expect early profits from air transport but they will demand a progressive showing. Freight rates will be higher here than in Europe, and it is hoped that American shippers will be induced to pay extra for greater speed in transportation, but it is likely that here as well as abroad it will be found economically necessary to fill out the pay load with passenger traffic.

PIONEER exhibition flyer, wartime instructor, and air mail pilot, Art Smith's career as an aviator was long and brilliant. He was sixteen when it began and only thirty-two when his mail plane crashed into a tree at night near Bryan, Ohio, ending a life which had contributed much in practical ways to the development of aviation. His work was particularly valuable in the development of the parachute. He was a pioneer flyer in the Orient.

Art Smith's Spartan mother helped him make his first plane by sewing together the wing fabric. She must have felt some degree of consolation in the signal manner in which her son was honored in death. Just before the funeral services at Cleveland, attended by brother pilots, a wreath was dropped over his home from a plane piloted by Lawrence G. Fritz, who was making the first westward run of the new Cleveland-Detroit-Chicago air mail and express service operated by Henry Ford. This is the first important extension of the Transcontinental Line.

W 1TH the passage of national legislation to regulate civil aviation under the Department of Commerce, prompt action should be taken by states which have already passed legislation of their own, in order to avoid conflict and assure uniformity. There are nine states which have aircraft laws differing in their regulatory provisions—California, Connecticut, Kansas, Maine, Massachusetts, Minnesota, New Jersey, Oregon and Wisconsin. And now Florida has just passed a law imposing fees and regulations of such a type that one is led to think that the law-making Solons of the state do not care for the future growth of aviaton or else they want it to be controlled by a favored few.

Air transport in Europe has been handicapped by the conflicting aircraft laws of the various nations. In a country such as ours, in which a plane may cross three or four states in a morning's flying, such confusion would be disastrous. Existing state laws should be repealed or brought into harmony with the national plan.



## CZECHO-SLOVAKIAN PLANES

ARRYING high honors at the speed and weight-carrying

George F. McLaughlin

planes under 100 h.p. an Avia B.H. 10 made a speed of 106 m. p. h. The two next machines to finish were B.H. 10's, flying at 101 m. p. h. Fourth was a B.H. 11 (two-seater).

events of the third aviation meeting at Prague last fall, the Avia planes showed the reason for their favor with Czecho-Slovakian Government Air Service. The contest for speed with 500 kgs. useful load was won by a 240 h.p. Aero 12 at 121.5 miles per hour. Except for this race, all events were won by Avia planes. Forty-five machines participated in the races over a 200 km, course.

The contest for planes carrying 250 kgs. was won with the Avia B.H. 21 single-seater with an Hispano-Suiza engine delivering 380 h.p. and making a speed of 160 m. p. h. Two views of this machine are shown in the illustrations above.

The characteristics of the B.H. 21 are: Span of lower wings (greater than upper wing span) 8.9 m.;

length, 6.87 m.; height, 2.74 m.; total wing area, 22 sq. m.; total weight, 1,075 kg.

In the events for machines having a speed of not less than 161.5 m. p. h. and 167.6 m. p. h., an Avia B. H. 21R, covered the course at 186.6 m. p. h. This machine was fitted with small racing wings, Lamblin radiators and a Reed dural propeller, but otherwise similar to the standard B. H. 21 type.

In the race over a 200 km. course for sport

at 98.7 m. p. h.

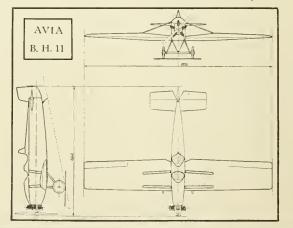
Specifications of the B.H. 10 are: Span, 8.8 m.; length, 5.6 m.; height, 2.38 m.; total surface, 9.8 sq. m.; total weight, 415 kg. The engine is a 60 h.p. 5-cylinder air-cooled Walter. Fuel is carried for a flight of 3

air-cooled Walter. Fuel is carried for a flight of 3 hours duration at normal speed.

Dimensions of the Avia B.H. 11 are shown on the drawing below. The wing area is 13.6 sq. m. Total weight, 580 kg. Fuel for a flight of four hours' dura-

drawing below. The wing area is 13.6 sq. m. Total weight, 580 kg. Fuel for a flight of four hours' duration is carried. Wings of 10.2 m. span instead of 9.72 m. may be fitted on the B.H. 11, increasing the lifting area to 14.2 sq. m., and making the machine more suitable for touring purposes and cross-country flying.

The Czecho-Slovakian Pilot, Lieut. Jira, recently flew an Avia B.H. 9 from Prague, Czecho-Slovakia. to Croydon, England and return. The 1,565 miles were covered at an average speed of 86.9 miles an hour. His machine was adapted for the long flight by adding fuel tanks in the passengers' cockpit.
The machine carried a load of 340 kg. instead of the normal load of 215 kg. Thus loaded, the high speed attainable was 155 km. per hour.

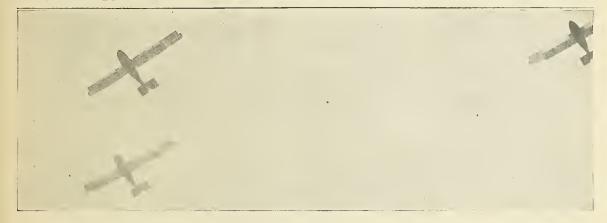




Two types of Avia 60 h.p. light airplanes of the Czecho-Slovakian Air Service. The BH 10 is a single seater.



### THE AIRPLANE BUILDERS—AND GOODYEAR



GOODYEAR experience in the design and manufacture of airplane equipment is as old as the airplane itself.

Even before man had taken wing, Goodyear was learning how to make special rubber compounds for special service.

Rubber—like metals—must be prepared with a specific knowledge of the duty the finished product is to perform. Goodyear knows the needs of aircraft, and aircraft builders. A corps of highly trained aeronautical experts maintains this knowledge by constant co-operation with airplane manufacturers.

Goodyear builds airships, and balloons, of every type and size, and makes everything in rubber for the airplane. Write Goodyear, Akron, Ohio, for any information you want.

The GOODYEAR-ZEPPELIN CORPORATION, a subsidiary of The Goodyear Tire & Rubber Company, holds the U.S. patent and manufacturing rights of Luftschiffbau-Zeppelin, and is ready to build Zeppelin airships of advanced type for any requirement of commercial service or national defense



AVIATION EQUIPMENT

Say you saw it in AERO DIGEST

"Well, about eight bells that

night, it suddenly strikes him

that he's a flyer. He's had

# THE YARNS OF; "HELL'S BELLS" O'N

HE man in the The Blonde Who Wanted to Fly case." says Hell's Bells, "was one of these short, pink fellows with

a wrist watch and a mustache and a silk handkerchief. The kind of a fellow you called an Englishman only this one came from South Africa and smoked Abdullas. The girl was one of these kind you call a peach. She had sort of clean hair, if you follow me, and her feet were well cut, not just slabs pasted into French heels. She had a face too, if I remember rightly, and when you saw it you said to yourself 'hot dog.

Hell's Bells beckoned for the steward. "The trouble with whiskey bottles," he said, "is that the bottoms are built too close to the tops. But to go on, the Danin Fool in the case was a curly-haired boy from Texas who wanted to learn how to fly and did, only not as quick as all that.

"Of the three of them the only one who could fly when the story starts was the short, pink lad from Jo-

burg. All of which brings us to an aerodrome which is a place where Iron Men in wooden ships play skytag with the angels and ground-tag with the bartenders.

"The boy from Texas got what is known as his three landings which is a way you used to learn to fly in the old days before the staff began to court-martial pilots for daring to become generals. Three landings he gets-an hour and a quarter in the air the Pink Boy from South Africa hops out

of the bus and says: 'Well, go ahead. What's a matter? Got the wind up?

"'Hell, no!' says the curly-haired Kid, adding something about the Pink Boy being a four-toed wart without a pancreas. Which was a lie, all but the four-toed, no pancreas part.

"Well, the Kid gives her the gun and hops off, missing three trees and a hangar by the mere fact that his tires were half deflated. All in all the Kid flies, see? He doesn't dare turn around for about an hour and he doesn't know how to land when he does turn around. But all in all he flies. That's the important part.

By James Warner Bellah

a drink or two and he's dancing down at the King Edward Hotel and he's feeling pretty good. And about that time he meets this girl who is the kind you call a peach and say hot dog about. He notices that she has kind of clean hair and that her feet are put on straight. She notices that he's a kay-det, only after he talks a little bit she thinks there's some mistake and that he is really a mixture of Captain Guynemer, the Angel Gabriel and Major McCudden. She tells him she's dying to fly. He forgets for a moment that for the next three weeks he's

makes him get down to cases. He does. "Two days later, when he hops off on his morning solo to do his two finger exercises on the old Jenny

flying to die, and he promises to take her up. She

joystick, there she is a couple of thousand feet down waving a red raincape on the old Exposition Grounds. 'Oh, my God!' says the Kid, and he gets so flustered



all told — whereupon "Af er he talks, she thinks he is a mixture of Captain Guynemer, the Angel Gabriel and Major McCudden.

he pulls back the gun and before he knows it, he's landed. Well, he has the decency to put her in the back seat where the engine can't land in her lap, and he climbs into the front seat himself. To make a long story short, the front seat has all the workings except the throttle. He gets her to start the bus all right but after they hop off he can't make her understand that he wants her to pull off the gun. She's having the time of her life leaning over the side and signaling for loops and spins and yelling 'Whoopee!'

Meanwhile, the Kid sweats off seven pounds of aviation lard. They go up and down the countryside making a long distance record with this Bimbo going crazy for joy and then finally, twenty miles from homeputter-putter-fizz, and the gas is gone. The Kid does just as the old instruction book says. He lands.

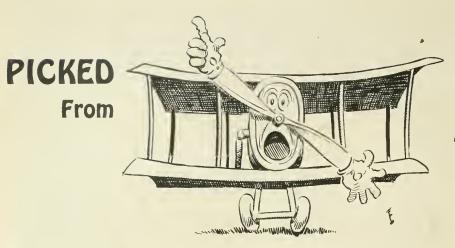
"At five o'clock the next day the Kid is up on the carpet at Flight Office.

"'Listen,' says Pink Jowls, 'you're in for the finest bunch of ash shoveling and paint scrubbing you ever saw in your life.'

(Continued on page 169)



Say you saw it in AERO DIGEST



The

AIR

AERO DIGEST will award a prize of \$5 each month for the best joke published. Only jokes pertaining to the aircraft field considered. Address the "Picked From The Air" Department, Aero Digest, 220 West 42nd Street, New York, N. Y.

Mr. A. B. Palmantier, Atlanta, Ga., was awarded the prize for March with the following:

### Fifty-Fifty

Pat Murphy was taking his first flight in an airplane. The pilot was taking him over New York City. When they were up about 3000 feet, the plane suddenly went into a nose dive. "Ha, ha," laughed the pilot, shouting to Pat, "I'll bet fifty per cent of the people down there thought we were falling."

we were falling."
"Sure," admitted Pat, "and I'll bet fifty per cent of the people up here thought so too."

Jilted: That woman is just like an airplane.

He: Howzat?

Jilted: No good on earth.

-Rice Out

Operations Officer (watching an airplane): "Say, Sgt. Batson, what's the names of the men flying the TW3?"

Batson (also watching the airplane): "I don't know, sir; but judging from their flying, I should think that it was Fitz and Startz."

Fair Young Thing (indicating a dolled up staff sergeant): "Does he pilot?"

Buck Private: "No, he don't pile it; he just spreads it."

Pilot: "I had airplane chicken for dinner Sunday." Crew Chief: "I'll bite; what kind is that?"

Pilot: "One of them kind that is all wings and machinery."

-J. L. Derfus.

This delivering by air mail isn't any new thing. Look what the stork has been doing for ages.

-S. Calif. Wampus.

When asked why he had entered the aviation business, Henry Ford explained that it is a lot of fun. He'll have to think up a better excuse than that.

-Life.

About the only kind of money that doesn't have wings is the money we spend for aviation.

-New York American.

Whatever the future of the Air Service, they will have a great file of newspaper clippings to gloat over.

—Life.

Effic: Pa, I wanna join the Transcontinental Air Mail Service.

Pa: Nopey, nopey, Sugar Plum. No daughter of mine will ever be a fly-by-night.

-Yale Record.

"Well, I guess I'll drop in on the girls," said the aviator, as he crashed through the roof of the women's dormitory.

-Stanford Chaparral,

Mary: "I was flying with Harold last night and he had to make a forced landing because he lost his bearings."

Mable: "Well, at least he was original. Most pilots run out of gas."

Nervous Passenger (in air taxi, about 5,000 feet up): "W-w-what are you 1-1-laughing at, driver?"

Driver: "I'm just laughing at the superintendent. About this time he'll be searching for me all over the lunatic asylum."

-Wright Aircraft Bulletin.

"Is his father well to do?"

"Yes, I guess so. He's done him for a coon coat and a 3-motored airplane since the first of the month."

—Amherst Lord Jeft.



## The Buhl-



## Airster



UILT for a variety of services, the Airster introduces itself as an efficient commercial airplane, comprising many unique features. The type

illustrated is provided with a 90 h. p. Curtiss OX5 engine; by simple changes in the engine mount, any American aircraft engine from 100 to 200 h. p. may be installed. Inherent design features facilitate its adaptability for the following services: passenger carrying, training, photography, insecticide dusting, light cargo and air mail carrying.



ALUABLE space and time are saved by the folding wing arrangement. The machine may be easily transported from one field to another

without any disturbance to the wing alignment. The Airster is the product of many years of successful aeronautical engineering design and recognized technical skill, assuring safety and efficiency. The Airster embodies the most recent constructional features which have proven superior in the actual services for which it was designed and built.



### SPECIAL FEATURES

Interchangeable wings (upper and lower)

Adjustable stabilizer

Oleo shock absorbers

Steerable tail skid

Split Axle chassis

Wide wheel track

Free air radiator

Adjustable fin

Dual controls

Folding wings

Welded Steel Construction



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BUHL-VERVILLE AIRCRAFT COMPANY

2730 Scotten Avenue



Detroit, Michigan

## WESTERN NEWS

### TRAVEL AIRING THRU THE GREAT SOUTHWEST

By George Lyle

THERE were once two men who owned a Jenny and by the judicious use of such made a comfortable living. In an attempt to do likewise my partner, Fred Hoyt, and myself were making an artistic but nevertheless horrible failure. After ponderous cogitation we came to the very human conclusion that the cause of this sorry state of affairs lay not so much in our lack of ability but rather in the lack of equipment. As quickly as possible we set out to remedy this deficiency and hied ourselves hither and yon inspecting the products of the many manufacturers of modern light commercial planes.

We traveled far and saw much but the quest did not terminate until in Wichita, Kansas, Mr. Walter Beech and his cohorts of the Travel Air Mfg. Co. so demonstrated their wares that when we finally did leave we had not only purchased the up-to-date OX5 job we had originally planned on but in addition had acquired a C6A motored Travel Air and the distributorship for this make of planes for the Pacific Coast States.

We took delivery of our ships at Wichita and in the teeth of a strong headwind took off for Fort Sill, Oklahoma. Fred was flying the C6 and I the OX and it was agreed that he was to throttle down to my speed. This was not so irksome for him as might be imagined inasmuch as the trim little OX5 Travel Air with its streamline wires and dural prop cruised easily at eighty miles per hour. Despite the disadvantages of the wind direction we made the two hundred miles to Fort Sill in a little under three hours.

The next day we were slipping over that gnarled expanse of barrenness known as North Texas. We had proceeded but a short way when the wind out of the southwest had increased its velocity to thirty miles

an hour and the consequence was that it took a good five hours to reach Big Springs where we decided to await the following day before pushing on to El Paso.

The next day on passing over Van Horn, a little town crammed in amidst the mountains, I noticed to my discomfiture that my oil pressure was dropping rapidly so I signalled Fred that I was obliged to go down and he picked out the best appearing field where after landing we soon located my trouble and were ready to start again. I was dubious of the ability of the OX5 to get out of that field as it was short, the altitude was high and the surface was a soft sand whose tenacity in clinging to a wheel would put the proverbial bull dog to shame. Rather reluctantly I taxied to the furthermost end of this miniature Sahara, wheeled around and gave her the gun, feeling all the while that I was taking advantage of even the splendid capabilities of the Travel Air. Slowly she started to roll and as the dural prop took hold picked up her momentum and to my amazement soared off with plenty of room to spare. It was undoubtedly a remarkable performance for an OX5 motored plane as I was carrying 47 gallons of gas, three suitcases, tools, and the unending miscellaneous paraphernalia that a flyer will pick up.

El Paso to Tucson, Arizona, was an uneventful but pleasant hop as was the next one to Yuma where with but 250 more miles to go and the worst of the mountains crossed I felt almost as if I were home. Later events proved this to be an ill-founded impression and that you are never home until your hat is hanging on the old familiar peg.

The day for our final hop dawned bright and clear and the first hour in the air was beautiful as we skirted the famed Imperial Valley, but as we rounded the Salton Sea we saw heavy storm clouds lying ominously in the San Gregonia Pass. As we were so near our goal we pushed on in spite

of the storm. Closer and closer to the ground the gathering clouds forced us and at the entrance of the pass we ran into the rain. It was no gentle shower but a chill mountain downpour and huddled low in our seats we sought to protect ourselves from the stinging, rain-laden blast from our propellors. We kept on, each moment expecting a break in the storm. Constantly we were being forced down as the density of the cloud banks increased. We penetrated further until even the mountains themselves were obscured and to avoid crashing into one of the bleak hill sides we knew surrounded us we dropped to within a hundred feet of and followed the torturous course of the Southern Pacific tracks whose outline we could just make out.

Somehow or other and by the gracious whim of Lady Luck we got through the pass and although the rain had not slackened it was a great relief to be out of the mountains with our home station. Clover Field, but a short distance away.

This trip being my first long cross-country was for me replete with thrills, impressions and experiences that are nigh invaluable.

### NORTHWEST NOTES

A IR enthusiasm is steadily increasing in the Pacific northwest according to Donald Hartman and Creed Buchanan who report that Portland, Ore., is soon to have a flying field which will be connected with the Pacific Coast air mail.

Pearson Field, Vancouver, Wash., the home of the 96th Division, is recognized as one of America's great army bases. This field was dedicated last fall with a very successful air demonstration in honor of Lieut. Alexander Pearson, the Portland aviator whose brilliant career was ended when a plane he was testing crashed to earth, September 2, 1924, during his preparation for the Pulitzer Air Races.

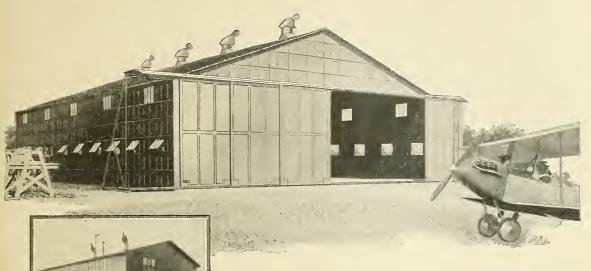
The purpose of the air demonstration was to show how quickly a great battle fleet of planes could be mobilized to protect the Columbia basin, how that fleet could be handled and operated from the strategic base of the northern coast and the progress being made in aviation. Hundreds of planes from all sections of the north and southwest participated. There are 120 reserve officers now using the field for practical flying training.

The airways along the coast are being marked from San Diego to Seattle. The Standard Oil Company is coöperating in this admirable undertaking by painting the name of the town where located on the roof of each of its storage stations along the routes. On the completion of this section, marking of the airways eastward from San Diego, Los Angeles, San Francisco, Portland and Seattle will be commenced.



Travel Air plane used by Mr. and Mrs. Andrew Risser of Wisner, Nebraska on their recent trip through the Southwest.

# Permanent Steel Buildings for All Air-Port Needs





Truscon Buildings as sure fire-safety with economy. Types to answer any requirement can be furnished. Truscon Engineers gladly co-operate with you.

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Youngstown, Ohio.

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Name .....

Say you saw it in AERO DIGEST

### CLOVER FIELD FLYERS

THE Clover Field flyers are preparing the itinerary for their Pacific Coast Tour of 1926. These flyers, composed of men of the U. S. Army Air Service, Reserve, with headquarters at Clover Field, Santa Monica, are all experienced aviators, and are the men who do the major portion of the work for the motion picture industry of Hollywood.

The following famous flyers compose the 1926 group: The director, Major Edwards, Kenneth Montee, E. L. Remelin, Art Gobel, Bob Lloyd, Bon MacDougall, Frank Clark, F. Tomack, Leo Nones, Gladys Ingle, S. Matlock, and L. Unger.

In addition to exhibition work, they do passenger carrying on either short demonstration trips or on extended cross-country trips, and photographic work. Chambers of Commerce, clubs or other civic organizations can secure their services for air demonstrations.

### PILOTS DEBATE ON STUNT FLYING

THE Professional Pilots Association met on February 9th at the Felix Café in Los Angeles for a debate on whether stunt flying, except for military, instruction and test purposes, is a detriment to the advance of the aircraft industry. It was one of the largest gatherings of flyers ever held in Southern California.

Judges Albert Lee Stephens, Charles S. Crail and Sidney Reeve, all of the Superior

Court, were the judges of the debate. The committee in charge defined a stunt as a maneuver of the controls of an aircraft by the pilot in such a way as to cause the machine to deviate from its normal course in flight or normal state of stability, provided such maneuver is not absolutely necessary to prevent the machine from collision with some object, through lack of vision or judgment of said pilot; to fly at a needlessly low altitude.

The affirmative was championed by Dr. F. C. Whitney, G. L. Budwig, and W. D. Waterman; the negative side, by Art Goebel. Jimmie Crossman and Wavne Allies. Each side was limited to 30 minutes with 9 minutes rebuttal-the time to be divided as contestants desired.

Before starting the debate, Mr. J. Budwig gave a short talk on the purpose and aim of the Professional Pilots Association, showing the steady growth of the Association, and their efforts to raise the standard of aviation.

Both sides ably defended their side of the question, giving many reasons pro and con; however, the decision was given in favor of the affirmative.

After the debate a number of speakers gave interesting talks, among them being Earl Daugherty and his father; Lieut, Kenyon, commander of Clover Field, who said that stunt flying is part of the Army training, and that 60 per cent of the accidents in the army are caused by careless and low flying and the balance by incompetent flyers: Miss Inez Donavan, Secretary of the Long Beach Aero Club; Jack Rand; Joe Skidmore, the Poet Laureate of Laguna, and many others.

### FLYERS EXTOL MITCHELL

WILLIAM MITCHELL, late Colonel, Air Service, United States Army, had many friends at the Brea Air Club dinner meeting at the California Hotel Coffee Shop on January 28. Captain William Frye of Long Beach, W. D. Waterman of Ontario, and several other well known pilots recalled personal traits of the famous "fighting Colonel," and many times during the evening spontaneous applause followed assertions from speakers personally acquainted with Mitchell, who referred to him as the "hero of the hour" and "our foremost patriot."

The meeting was attended by 75 members and friends of the air clubs at Brea and Long Beach.

Captain Frye told of his trip to San Francisco and return in seven hours, reminding his listeners that a 36-hour schedule from coast to coast is now the usual thing. Frye waxed sarcastic in referring to the comparative cost of a \$43,000,000 battleship and a \$10,000 airplane, explaining in what a simple manner any small aircraft, loaded with high explosive, could sink the largest and most expensive man-of-war afloat. He exhorted his audience to take more active interest in the nation's affairs by intelligent voting.



March 1, 1926

Dear Reader:

When you have a toothache you don't go to a blacksmith, do you? If you are looking for good aeronautical material you should go to a reputable aeronautical supply house; your life or perhaps some one else's may depend on the materials used.

Our business has grown to its present size of over 40,000 ft. of floor space because of our ability to deliver products of reliable manufacture, when and where required, at prices consist-2-

ent with good merchandising practice.

Our fabric department is now making over 1100 covers for DH surfaces; we have every modern facility to give you wing covers made to government specification, with government inspected material. By purchasing such material you are not taking chances and neither are we.  $exttt{May}$  we send you a sample and

Johnson Airplane & Supply Co.

Elflower

P.S. Our new illustrated catalogue #7, listing everything for the designer, builder, or user will be ready April 1st.

### THE RYAN AIRPORT

T HREE years ago few people realized, when Lieut. T. C. Ryan of San Diego was hauling his first passengers in a big powerful OX5 Jenny from a baseball lot at the foot of Broadway, that some day his planes would be flying daily from Mexico to Canada. Three years is a short time, yet the plans for the Los Angeles-Seattle air mail run have been completed and the Pacific Air Transport using the new Ryan monoplane with Wright Whirlwind motors will begin operation this spring.

Between Los Angeles and San Diego a daily passenger airline has been in operation for eleven months and has the unique distinction of covering over 80,000 passenger miles between the two terminals without injury to a single pilot or passenger. Even more remarkable than this, perhaps, is the fact that the Los Angeles-San Diego Airline, owned and operated by the Ryan Airlines, Inc., has paid its way. Without subsidy, without government contracts, without a lavish expenditure for advertising, the line has come through without showing a deficit. Now that the first year of operation is nearly over, plans for 1926 call for an increase of equipment, more advertising and a greater volume of business.

The "Cloudster" (shown in the accompanying photograph), one of the Ryan Airline fleet of ships, was built by the Douglas Company, has a 400 h.p. Liberty motor and

a wing spread of 56 feet. She is sister ship of the 'round the world cruisers and was used by the Douglas Company for experimental work while building the cruisers. She holds the Pacific Coast altitude record of 24,000 feet without a supercharger. The Ryan Company rebuilt this ship into a 12-passenger enclosed job, which now makes the run daily between Los Angeles and San Diego in 90 minutes.

The Ryan School of Aviation was started with the hope that students could learn to fly, build and repair airplanes, and overhaul motors at a very small cost to themselves. Lt. Ryan devised the "earn while you learn" plan, paying the students for working and learning in his shops. Today students even from Alaska and Hawaii are registered among the twelve students accepted each month. For the coming year four different courses in aviation will be offered.

For flying personnel, five pilots are employed: Lieut. T. C. Ryan, seven years flying experience; J. J. Harrigan, dean of the School of Aviation, who has flown the Shenandoah and

every type of land and sea plane, over 10 years flying experience; George Allen, an army graduate from the West Point of the Air Service, four years experience; B. F.



B. F. Mahoney, John L. Bacon, Mayor of San Diego, and Lt. T. C. Ryan, with four fair passengers. Below—interior of the "Cloudster."

Mahoney, who is one of the civilian trained pilots, four years experience; and Hawley Bowlus of McCook Field, five years experience. Twenty-four people in all are employed.

## WESTERNISTUNT PILOTS WEAR

# MEYROWITZ "LUXOR" G O G G L ES

Left to right—Bon MacDougall, Fronty Nichols, Reginald Denny (motion picture star), Paul Rictor and Art Goble, all members of the "Black Cats Flying Circus" wear MEYROWITZ LUXOR GOGGLES while making movie thrillers.



These pilots of long experience, who are engaged in doing the most difficult sort of air work, wear MEYROWITZ "LUXOR" GOGGLES.

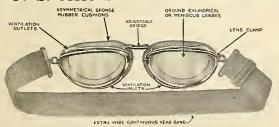
"LUXOR" GOGGLES can be fitted with prescription lenses, white or tinted. Many prominent pilots wear "LUXOR" GOG-GLES with corrected

### NUMBER 6 U. S. AIR SERVICE "LUXOR" GOGGLE

This LUXOR Goggle is our latest, made especially for the U. S. Air Service. Providing an unobstructed field of vision, comfortable facefitting rubber cushions that permit continuous wearing without irritation. Fogging and steaming of lenses prevented by ventilators with dustproof inlets.



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Insist on genuine Luxor Goggles

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520 Fifth Avenue at 43rd Street, New York City

Adjustable bridge insures fit and face comfort. Lenses held in place by special instantly locked metal rim, permitting quick replacement. Light metal construction and flanged eyecup rim prevent possibility of cutting face in case of accident. Extra wide continuous adjustable head band.

Contractors to the U.S. Government Paris London Detroit St. Paul Minneapolis



Mr. Howard I. Wood, sec'y., and Dr. T. C. Young, pres., of the Western Aero League.

### WESTERN AERO LEAGUE

A LITTLE over a year ago, the Western Aero League was formed at Glendale, Cal., for the purpose of being an alliance between aviation and commerce in the west, It is not composed of flyers alone, but has in its membership some of the leading business men and a number of Chambers of Commerce throughout the west.

The following Chambers of Commerce are either members in a body or their secretaries are members: Richmond, Berkeley, Santa Barbara, San Diego, Santa Ana, Glendale, Burbank, Bakersfield, Santa Rosa, Eureka, Long Beach, Brea, Alameda, Santa Cruz, Ontario, Redlands and Inglewood, Cal.; Winslow, Arizona; Galveston, Texas; Portland, Oregon, and Seattle, Wash. The Parkridge Country Club, Salinas, Cal., is also a member.

The officers and directors of the organization are: Dr. T. C. Young, pres.; Lt. C. P. Kane, 2nd vice-pres.; Frank H. Page. 3rd vice-pres.; Howard I. Wood, executive sec'y.; A. L. Oliger, treas.; the directors are J. C. Reilly, Thomas B. Slate, W. G. Scott, E. H. Barrett, George B. Harrison, Earl Daugherty, Ben Spencer, F. T. Letchfield, Dr. Sterling Bunnell and Howard E. Morin.

These men realize the benefits of commercial aviation and have banded themselves together for the express purpose of advancing it in their territory, which includes: California, Oregon, Washington, Idaho, Montana, Wyoming, Colorado, New Mexico, Texas, Arizona, Nevada, Utalı, Alaska and Hawaii.

Their activities include encouraging and building of airports and landing-fields, promoting aviation mapping and airways, assisting the Air Mail, fostering federal legislation, encouraging manufacturing and disseminating favorable information.

The League is doing a vast amount of good in the West and with such worthy aims and activities should continue to grow and keep the West abreast of the times.

### NAVY AIR PILOTS TO TRAIN AT SAN DIEGO

S AN DIEGO will be a training center for navy air pilots when about 200 ensigns are sent there this summer from the Annapolis class of 1926. Hampton Roads, Va., also has been designated an aviation training school. Each of the young officers will be given about 25 hours of flight instruction, including a total of 10 hours of dual instruction as pilots.



THE LYLE-HOYT AIRCRAFT CORPORATION OF SANTA MONICA, CALIF.

Announce their Agency and Distributorship of the

### TRAVEL AIR

For the Pacific Coast States Data, information and estimates cheerfully given

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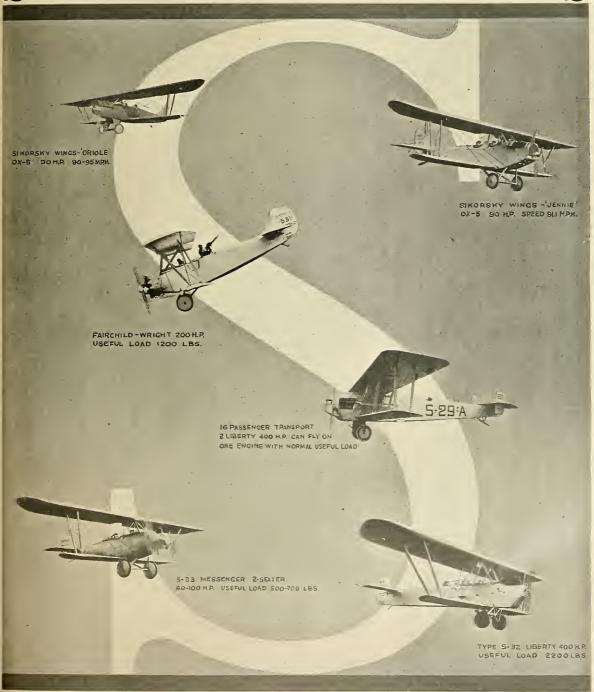
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# SIX SIKORSKY SUCCESSES



In addition to the above types, five other types of Sikorsky aircraft cover every requirement of modern commercial air transportation. Sikorsky airplanes represent 17 years' experience in building successful aircraft. Sikorsky planes combine high performance with safety and reliability.

SIKORSKY MANUFACTURING CORPORATION 250 W. 57th ST.. NEW YORK CITY — ROOSEVELT FIELD, LONG ISLAND

### NEWS OF THE N.A.A.

### LANSING

THE annual banquet of the Lansing Chapter was held at the Elks Home on December seventeenth with an attendance of about sixty people. The chief speakers of the evening were Lieut. Thad Johnson and Lieut. Smith of the First Pursuit Group. Their talks were splendid and left no doubt in the minds of their listeners about the truth of General Mitchell's assertions.

The State of Michigan in cooperation with the city of Lansing, has designated about three hundred acres of state-owned land for a flying field. This action was taken by the State Administrative Board headed by Governor Groesbeck. Charles H. Davis, secretary of the Lansing Chamber of Commerce, started an agitation toward this end nearly two years ago and it is due solely to his efforts that Lansing now has a very fine field for its use. This may be the start toward a series of state-owned fields in Michigan and other states may follow her lead until the system extends over the entire country.

The field, which lies about five miles northeast of the center of the city, is of high, well-drained, sandy soil and is fairly level at present although it will require some grading. Proper marking, wind cone, etc., will be taken care of by the chapter, and this summer should see considerable activity on it.

Lansing flyers are Ted Abrams, of the A. B. C. Airline, Art Davis of the Michigan Airways and Eddie Preston of the American Commercial Airways. In addition there are three privately owned sport planes: Joe Murdoch has a Jennie; Ford Bott, a Canuck; and B. B. Hunter, a Yackey sport plane.

### LITTLE ROCK

M R. C. F. SCHORY of Washington, D. C., secretary of the Contest Committee of the N. A. A., inspected the Little Rock Airport on February 5, 1926. Mr. Schory states that he was most favorably impressed with the development of aeronautics in Little Rock and the facilities available at the Little Rock Airport, which, he said, compared most favorably with the best in the United States.

About ten days prior to Mr. Schory's visit there, thirty thousand dollars were subscribed within a few minutes and the Little Rock Air Meet Association was organized to handle the Balloon Races. Mr. C. L. Thompson was elected president of this association.

It was decided to hold the National Balloon Races, which were recently awarded to Little Rock, on April 29th and the Arkansas Aeroplane Races April 29th and 30th, 1926.

An intensive membership campaign was

decided upon at a luncheon of the Little Rock Chapter with a goal of one thousand members which from all indications will be reached.

Governor Tom J. Terral, Adjutant General James R. Wayne, Colonel J. Carrol Cone, State Auditor, and Mr. Moorhead Wright, Governor-at-large, N. A. A., are very enthusiastic and will make every effort to make the National Balloon Races and the Arkansas Aeroplane Races a success. The Chamber of Commerce and other civic bodies are enthusiastically behind this project.

### SOUTHERN CALIFORNIA

THE executive board of the Southern California Chapter at a recent meeting outlined a definite, constructive program for the year and by unanimous vote decided to dedicate their efforts toward the establishment of a real municipal airport for the city of Los Angeles—an airport of sufficient size to accommodate all present, projected and future needs for some years to come. Also, a field of sufficient size so that when Los Angeles is fortunate enough to secure the Pulitzer Races they will be able to hold them on their own municipal airport.

The landing field committee consists of Charles F. Willard, chairman, one of the



Cross Aerial Photo.

Mr. C. H. Babb, Capt. Lowell Smith and Lieut. H. S. Kenyon with the Southern California Chapter's World Flight Trophy.

early pioneer flyers; John W. Lyle, business manager, a former service aviator; Major C. C. Moseley, vice-president of the Western Air Express; J. B. Alexander, manager of the Los Angeles-San Diego Air line; Major C. R. Olberg, the noted U. S. Army engineer.

The chapter will henceforth hold general meetings of interest at stated intervals of approximately sixty days. The forepart of these meetings is to be devoted to business at

hand and to some serious lecture on aviation by an authority on the subject; the latter part of the program is to be of a more light and entertaining nature.

There is an immense amount of flying and aeronautic interest in and around Los Angeles—there being no less than twenty commercial fields from which companies or individuals operate. Among the larger companies are the Western Air Express and the Pacific Air Transport who have U. S. Air Mail contracts, and the Los Angeles-San Diego Air Line.

### **NEW YORK**

A T a meeting of the New York Chapter held in room 403, Washington Square Division of the New York University, on February 16th, the following officers were elected for 1926; president, Frank A. Tichenor; vice-president, Richard R. Blythe; treasurer, George Noville; secretary, A. C. Pickford.

The directors elected are: Charles H. Colvin, R. H. Depew, Jr., W. A. Rogers, Leon Colin, and Joseph Weil.

At the conclusion of the enthusiastic meeting, the new president stated that a campaign for increased activity in the chapter would commence within the next week.

Committees are to be formed for the purpose of stimulating aeronautics in the vicinity and one of the first problems that will receive the attention of the committee will be to aid in the fostering of the movement to select a suitable landing field.

### PULITZER RACE AT PHILADELPHIA

A DEQUATE financial guarantees having been received from the Sesquicentennial Exposition Association in Philadelphia, the National Aeronautical Association accordingly announces definite assignment of the National Air Races to be held during September at or near Philadelphia in connection with the Sesquicentennial Exposition.

#### NEW HAVEN

THE new Republican Mayor, John B. Tower, recently appointed a live, active and interested number of business men on what is known as the Mayor's Air Board. They are: Thomas M. Steel, president, First National Bank; Victor Roth, president, Security Insurance Co.; James W. Hook, president, Geometric Tool Co.; Seth W. Baldwin, attorney for the Connecticut Street Railway Co.; G. F. Wiepert, sales manager, Sargent & Co.; John H. Tweed, owner, New Haven Air Terminal, appointed secretary of the Air Board; L. S. Horner, vice-president, The Acme Wire Co., appointed chairman of the Air Board.

The Air Board had their first meeting and

will combine their activity with the National Aeronautic Chapter. Their method for providing an airport for New Haven, will be to enlist the interest and advice of the Park Board, which is composed of New Haven's recognized leaders and most conservative

It was agreed to cooperate and further the knowledge and interest in the Colonial Air Transport Line, which will start carrying the air mail between Boston and New York, stopping off at Hartford. This line expects to be in operation about June 1st.

The Chamber of Commerce and a number of the Luncheon Clubs are becoming interested in this air transportation activity and no doubt will be boosters for it.

### COLLIER TROPHY TO DR. S. ALBERT REED

THE Collier Trophy Committee met at National Headquarters on February 5th and awarded the Collier Trophy for 1925 to Dr. S. Albert Reed of New York for the development of the Reed metal pro-

Dr. Reed has spent the last four years in the development of a metal propeller especially built for high-speed engines used in Army and Navy pursuit airplanes and the year 1925 marked the general adoption of this type of propeller for all high-speed airplanes used in this country, 'Many European countries, following the lead of the United States, are also using propellers built under Dr. Reed's patents.

The Deed of Gift of the Collier Trophy which was donated by the late Robert J. Collier, Esq., provides that it shall be awarded annually by the National Aeronautic Association for the greatest achievement in aviation in America, the value of which has been demonstrated by actual use.

### DES MOINES

A T the annual meeting of the Des Moines Chapter, the following officers were elected for the ensuing year: Wm. W. Waymack, president; Harvey T. Ray, vice-president; G. W. Vest, secretary-treasurer.

Captain F. C. Venn, Flight Surgeon, 7th Corps Area, and 1st Lieutenant Isiah Davies, Commanding Officer of Richards Field, both of Kansas City, were the speakers of the occasion.

### WASHINGTON, D. C.

THE D. C. Chapter met at luncheon at the Bureau of Standards on February 12. Dr. G, W. Lewis of the National Advisory Committee for Aeronautics and Dr. L. J. Briggs of the Bureau of Standards

After luncheon, an inspection was made of several of the laboratories working on aeronautical problems. The first stop was the central wing of the Industrial Building in which are located a large number of testing machines, including the 10,000,000 pound compression testing machine, the largest in

the world. In an adjoining room the large Emery horizontal machine, with a capacity of 2,300,000 pounds in compression and 1,150,000 pounds in tension, was seen in action. The three-foot wind tunnel in the same building was also inspected.

Next came the 10-foot out-door wind tunnel in which speeds up to 70 miles per hour are reached, and the dynamometer laboratory. This is the only laboratory of its kind in the world. Aviation engines are tested under actual flying conditions at any altitude up to 30,000 feet.

In the 54-inch wind tunnel, which was the next point of interest, a pressure gauge was shown mounted in the tunnel wall for measuring and recording rapid variations in pressure in the tunnel. These variations are of interest in connection with the small differences between the results of measurements in different wind tunnels.

In the aeronautic instruments section, the testing equipment and a number of instruments of especial interest were inspected. The altitude chambers in which instruments are subjected to pressure and temperature tests simulating flight conditions were examined, as well as apparatus for conducting aging tests of the thin sheet duralumin for use on the proposed all-metal airship and apparatus for aging tests of duralumin bars. An altitude chamber which is being built for testing aeronautic instruments over a wide range of pressure and for conducting tests to determine the physiological effect of lack of oxygen was also seen.

### SPALDING CONSTRUCTION COMPANY, 125 E. 45th Street NEW YORK CITY

4 PLANES

of an average wing spread

(32') are well

housed in the Spalding hangar

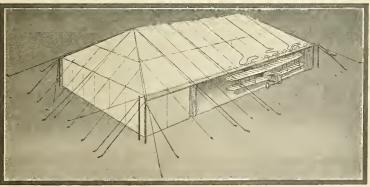
illustrated here.

The 2-plane

\$1,600 complete.

### 74 YEARS

experience making big tents has gone into the design of this tent. The experience of the leading hangar engineers is in this hangar.



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The SPALDING STORM-PROOF 4-PLANE PORTABLE HANGAR. PRICE \$2100. COMPLETE.

T HIS hangar is built of the finest materials and workmanship in every detail, able to withstand a foot of snow and a 70-mile wind. With reasonable care it will ride out 100 mile gales. It is 40 ft. wide by 70 ft. long with a 60 ft. by 10 ft. high canvas door on each of the 70 ft. sides. All dimensions can be varied to suit any size of planes. In addition to ample room for 4 planes, this hangar provides two working or storage

spaces 15 ft. by 25 ft. It is amply lighted by day and can be electrically lighted for night use and heated in winter. It can be moved on one 2 ton truck and erected in 4 hours. Its life is from 2 to 4 years depending on the care given it. We recommend it for any service where the first cost or a temporary location makes it unwise to spend 5 to 10 times as much for permanent structures. Deliveries can be made in 30 days.

#### Some of Our Work



U. S. Air Mall Hangars at Bellefonte, Penna

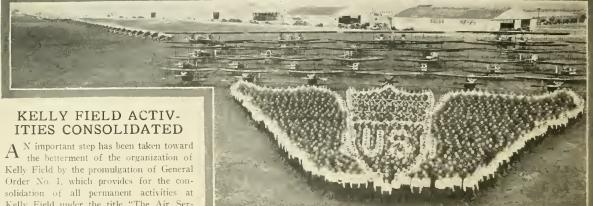
We designed and built 6 hangars of this permanent type in Cleveland. O., Bellefonte, Pa., and at Hadley Field, N. J., for the U. S. AIR MAIL, division of the Post Office Dept.

We are long experienced as designers and builders of all types of hangars and aviation ground equipment. Your inquiries regarding our services as engineers and builders are solicited.



U. S. Air Mail Hangars at Cleveland, Ohio.

# WITH the SERVICES



A living Air Service insignia formed by the officers and enlisted personnel of the Advanced Flying School, Kelly Field, Texas.

Kelly Field under the title "The Air Service Advanced Flying School, Kelly Field, Texas." This should result in a saving of overhead, a keener perception of the mission of Kelly Field and a concentration of effort on the part of all personnel toward making the Advanced Flying School the best of its kind in the world.

150

### TENNESSEE LEADS THE WAY

By C. B. Allen

TENNESSEE has ideas and a law of of her own about evolution that have led certain other portions of the world to look upon her as behind the times but she has set a style in aviation that is so progressive McCook Field has copied it for the rest of the country. Her flying National Guard has made the Jenny into a plane in which parachutes may be worn.

A year or so ago a general order was sent out from the office of the Chief of Air Service to all Government flying fields which said in effect that there would be no more flying without parachutes. And the order said that those higher up didn't mean maybe. To show how much in earnest they were, the h.ups pinned on an ominous penalty for "failure to comply." We forget the exact nature of the punishment but it was something awful like being grounded or not being allowed to wear spurs.

Then it was discovered that even with a special shoe horn, designed by McCook Field engineers for the purpose, no intrepid airman of useful size could be jimmied into the front cockpit of a Jenny so long as he had on a parachute pack. That he would ever be able to jump, supposing he ever did squirm in, was out of the question. So the order was rescinded in part, or a dozen other orders came out qualifying it and the upshot was that parachutes were worn by every one of Uncle Sam's Army airmen except those who were so oldtashioned as to fly Jennies.

These resolved quite largely into that portion of the "cream of the army" known as Reserve Officers (called into active summer training or down from the city for a practice flight) and some of them began to sour on the idea. They seemed to think that it was a matter of giving parachutes to "Regulars" and not 'o "Reserves." One or two in the writer's acquaintance who were to solo from the back cockpit demanded a parachute. They got it but their tempers were not improved by the scantily concealed jeers that accompanied it. The rest of the part-time flyers either went ahead and flew without giving the matter a thought or looked askance at the seven-year-old Jennies and wished they had "guts" enough to say ask for a parachute against the time when one of the weary old busses would go to pieces under them or catch fire in the air. A lot of flying men are plain fatalists and a lot more do things against their better judgment for fear someone will think they

So the Jennies went on flying just as



Tennessee Jennies remodeled to accommodate parachutes.

they flew in 1918 and the timid ones who asked about parachutes were rewarded with proper scoffing. Everywhere, that is, except at Nashville, Tenn. Down there the 105th Observation Squadron, better known as the "Old Hickory" Squadron, of the Tennessee National Guard, figured out that a man might just as well need a parachute in a Jenny as in any other ship. They also reckoned he would never need it more than once if he didn't have it that time. This logic had a particular appeal to them because, in common with other National Guard flying units, their ships were mostly Jennies. So they got busy.

It was quite easy once they started. They simply beveled out the back of the front cockpit until it sloped back into a large opening beneath the trailing edge of the top wing. They cut out a step in either side of the new seat-back so a man could dig his heels into them as he kicked out and give himself a good fling overboard. Then the seat cushions were removed to make room for the parachute seat pack and the upholstering was taken out of both seats to make more room. Five enlisted men did the job on a dozen Jennies at little or no cost and the squadron has been flying with parachutes six months. So far nobody has needed one. But if they ever do, they'll have them.

Certain high officials of the Air Service looked the job over. Recently Mc-Cook Field sent out an elaborate set of specifications for remodeling Jennies to take parachute flyers. The blue prints call for a lot of "trimmin's" but when the changes are all made the job will accommodate just two men with parachutes. And that is what the simple "Tennessee transformation" has been doing right

## WACO



ESPITE the fact that we are the largest producers of commercial aircraft in the United States with a production at the present time of one ship per day, it is necessary for us to increase our manufacturing facilities in the near future in order to keep pace with the demand for our product. It is therefore suggested to those contemplating the purchase of a WACO that they get in communication with the distributor in their territory immediately to avoid delay and disappointment.

#### WACO DISTRIBUTORS

NEW JERSEY and DELAWARF.— The Ludington Exhibition Company Atlantic Building, Philadelphia, Pa.

PENNSYLVANIA and MARYLAND--Reisner Aero Service Hagerstown, Md.

NORTH CAROLINA— Lloyd O. Yost Box 203, Pinehurst, N. C.

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ADVANCE AIRCRAFT CO., Troy, Ohio



A Douglas transport arrives at Oscodo bringing men and supplies.

### WINTER MANEUVERS OF FIRST PURSUIT GROUP

T HAT a successful air defense of America against an attack by the way of Alaska is possible, is assured by Major Thomas Lanphier, commandant of the First Pursuit Group, now located at Selfridge Field, following the organization's second annual winter maneuvers in Northern Michigan during January.

Reinforced by the knowledge gained on last year's northern expedition, the maneuvers this year were carried on at the temporary camp under varying climatic conditions with practically the same success that could be expected at the home base where the latest equipment for men and planes can be had. The operations are held each year at Camp Skeel, located near Oscoda, Michigan, 200 miles north of Selfridge Field,

where temperatures as low as 20 below zero were recorded. The ships were landed on the ice of Van Ettan Lake where they were kept throughout the week without shelter.

These maneuvers show that an aerial unit ean be operated from a temporary base in extremely cold weather with no connection with the home base except by plane and radio. The lessons learned naturally fell along lines of starting motors in cold weather, testing non-freezing radiator solutions, machine gun operation, landing gear, cold effect on fuel and proper clothing for the flyers.

Methods of starting motors finally resolved into placing a heated brick in the air intake of the motor and spraying it with ether from an unlighted blowtorch while the motor is cranked. They responded readily to this treatment and it has proven to be much better than any other method yet tried.

When the thermometer was well below the zero mark the motors with rare exception took hold under this method after only a few turns.

Several patented non-freezing radiator solutions were tried but it was unanimously agreed by all of the pilots that the motors operated more satisfactorily with a solution of alcohol and water but they will recommend to the engineering department of the air services that a more flexible radiator shutter be devised as it was found difficult to hold an even temperature in the cooling fluid with the present shutters. The patented solutions use glycerine to a large extent and it was found almost impossible to make the hose and gasket connections tight enough to prevent leakage. Objection was also registered to the odor emitted by the glycerine solutions.

The only fault of the machine gun operation in the cold climate was in their sticking on account of the oil gumming but this was soon remedied by the use of lighter oil in lesser quantities. Target practice on the ice of the lake had to be discontinued when it was found that the bullets ricocheted extremely and imperilled the men at the barracks a half mile away. Some practice was had at floating ice cakes on Lake Huron and considerable work was done on the ground targets with much success.

Although last year's maneuvers ended with an evenly divided group of pilots as to the merits of wheels and skiis for landing gear, this year's experiments resulted in a complete victory for the skiis. Runners of

### **DOPES**

### PIGMENTED DOPES

**VARNISHES** 

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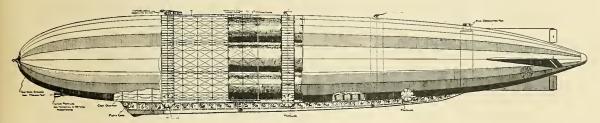
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### The De Passy Rigid Express and Battle Cruiser Type A



A N increase in longitudinal and lateral strength of 250 per cent over other existing types, with a corresponding decrease in weight of 40 per cent, are two outstanding features to be found in De Passy airships. The

lifting units are helium filled gas compartments. A new system of propulsion by means of paddle type and vacuum propellers eliminates projecting gondolas. A De Passy airship is a single streamlined unit offering a minimum of resistance. The advanced system of propulsion makes the maintenance of a large ground crew unnecessary—six men can handle a 900-ft. ship of this design.

PLANING or gliding over the surface of the water, driven by an air propeller, De Passy marine gliders are designed to safely carry large loads at high speeds with low power. The wide beam at the water line and low center of gravity make this type of water-craft stable and noncapsizable under all conditions of service. It is the safest mode of fast travel.

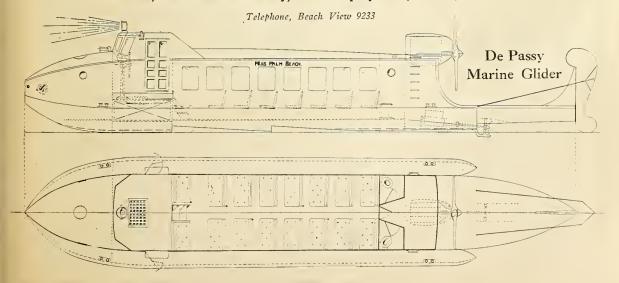
All De Passy gliders, from the 8-passenger model driven by a 120 h. p. Super Rhone aircooled motor to the 100 and 400 passenger type, as well as larger, are built along the new principles of the De Passy patents and are fitted with an auxiliary marine motor for maneuvering at low speeds. Illustrated below is the 35 passenger glider which is actually under construction and is to be operated in Florida. It is driven by a 400 h. p. Liberty motor and will attain a 75-mile speed with the utmost comfort to the passengers and crew.

### UNITED STATES AERO MARINE, INC.

Colonel Marcel De Passy, President,

Owner of the De Passy patents covering aeronautical and naval craft.

Offices, Plant and Laboratory, 2409 Cropsey Ave., Brooklyn, N. Y.



both smooth and longitudinal corrugations were tried. It was found that smooth surfaces allowed side skidding which is the objection to wheels for landing on snow and ice. Another objection to wheels is that they clog with snow when it is more than a foot deep.

The corrugated skiis, besides giving the pilot better control of his ship while on the ground, give strength to the runner and allow it to be made lighter. Observations of the flying qualities of ships when equipped with skiis resulted in the decision by the pilots that the ships were slightly slower but climbed faster.

For the first time in the experience of the flyers trouble was experienced during the coldest weather from water vapor in the fuel freezing and collecting in the carburetor. Experiments in placing a nonfreezing solution in the fuel which will mix with water will be tried out at the field. It has been suggested that alcohol mixed with the fuel will unite with the water and prevent its freezing but no test has yet been made.

For fuel, a mixture of gasoline and benzol has been most satisfactory although no trouble was had with unmixed gasoline.

Clothing for the flyers is still a serious problem and a request will be made by the post for help in the designing of better clothing for the experimental department.

Experiments are to be made in positions and shapes of windshields but this will not correct the faults of cold weather flying for the First Pursuit group as in flying in formation the pilots must look over the edge of the cockpit frequently to assure themselves of their relative positions and to observe the signals of the leaders.

The efficiency of the Douglas transports for the carrying of men and supplies to the camp was commented upon by all connected with the expedition. The planes are similar to the 'round the world ships and have an enclosed cabin with six seats and a four foot square baggage compartment aft. Practically everything used at the camp was transported to the outpost by these planes and daily service was maintained between the base and the temporary camp by plane.

Twelve pursuit ships of the Curtiss PW8 and P1 type were used in the maneuvers.

### LIEUT. MACREADY'S ALTITUDE FLIGHT

A MECHANICAL breakage in the supercharger resulted in the failure of Lieut. John A. Macready to break the existing altitude record (39,586 feet) held by Callizo, the French pilot. On January 29th the supercharged XCO-5 was climbed to its ceiling, 35,900 feet, more than 3,500 feet short of its objective. At this altitude the temperature was minus 62 degrees centigrade.

Sea level air pressure was obtained in the supercharger up to an altitude of 24,500 feet. On previous attempts for a world's record with other airplanes, sea level air

pressure had been obtained to an altitude of 33,000 feet. The r.p.m. of the engine at 25,000 feet was 1,720; at 35,000 feet it was 1.620.

As on other flights a critical point in the supercharger was noticed. This critical area occurred at approximately twelve thousand feet. A movement of the supercharger throttle of  $\frac{1}{16}$  of an inch would cause an uncertain building up of supercharger pressure which would sometimes surge to 1,000 feet below zero from a starting point of 3,000 feet above zero.

At 24,000 feet the supercharger throttle was moved forward about one-half inch with but little gain in supercharger pressure.

A gain in altitude of 11,000 feet was obtained after the supercharger limit had been obtained, indicating that the XCO-5 had much better climbing characteristics than other planes used previously.

### LANDING FIELD DATA GIVEN BY AIR SERVICE

A RMY Air Service officials of the 9th Corps Area at San Francisco, have been cooperating with the chambers of commerce of several cities in plauning municipal landing fields for commercial airplanes. The air office has issued a complete set of plans and specifications covering the needed type of field, which has been sent to several cities in the corps

### AIRPLANES FOR SALE

We have sold 105 airplanes last year which leaves a balance of 228 airplanes still for sale. We believe the prices on airplanes are at their lowest, and a small deposit on any of our airplanes will hold same for spring delivery. We expect a sharp advance in prices very soon. We still have plenty of Standards, Jennies, Canucks, Orioles, D. H.'s with Liberty motors, Spads less motors, T. M. Scouts with and without motors. A large number of these airplanes are set up, test flown and ready for immediate fly away delivery. Come and take your pick.

| Come and take your pick. | St. | S

These airplanes come complete with tools and instruments and the front seat is built so as to accommodate two passengers. These airplanes have been reconstructed and new longerons, new controls, new wires, new struts, new fittings, new instruments were installed where needed.

### LEARN TO FLY

No bond required for solo flights, and no charge for breakage. \$10000

Room and board near field at \$10.00 per week.

We will guarantee to teach a student to fly and successfully operate an airplane by himself, regardless of the number of flying bours required, and further, to furnish an airplane, free of charge, for the period of one hour for practice flights.

The flying school of the Robertson Aircraft Corporation is one of the oldest and best known in the United States. All of the instructors are ex-army aviators with wide experience and the equipment is the best that money can buy. The flying field is approximately six miles from the city of St. Louis and is easily accessible by railroad, street car and bard surfaced roads. It is the largest and best privately owned field in the country and the International Air Races of 1923 were held there.

Our course includes thorough flying training as well as complete instruction in the overbaul, care and maintenance of both the airplane and motor. The time within which one can learn to fly varies with the individual; eight to ten hours of dual instruction, stretched over a period of ten days to two weeks should complete the most stubborn case, and from then on, the refinements of the art can be gained only from experience. Commercial aviation is a rapidly growing industry. Don't delay! Enroll now!

Write for Booklet

It is not necessary to purchase an airplane from us in order to take advantage of the above special offer.

### ROBERTSON AIRCRAFT CORPORATION

ST. LOUIS FLYING FIELD, ANGLUM, MO.

# TRANSATLANTIC AIRLINER

(Not a flying projectile but a real aircraft)



De Muth All Metal Trans-Oceanic Monotriplane

### NEW YORK AND LONDON

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**NEW YORK** 

# WITH the INDUSTRY

### PORTABLE HANGARS

By W. T. Spalding President, Spalding Construction

M ANY commercial aviation prospects now are faced with housing problems that can be met by temporary and movable hangars. There are many companies who are counting on municipalities building their own airports within a short time or who have ground under a short term lease and do not wish to put much of their capital into buildings under such conditions. However, their operations demand some sort of housing for their planes.

An airplane must be protected from dust, dampness and the many other destructive elements of weather exposure. There has been an increasing demand, especially this past year or two, for a reliable and practical portable hangar. We have developed just such a hangar. It is not entirely unlike the wartime Caproni hangar which I designed when attached to the Public Works Officers' Staff at The Paris Naval Headquarters in the summer of 1918, although it has some decided improvements. The extreme portability of the wartime hangar is exchanged for a much greater sturdiness. The capacity is for either four or two planes of varying sizes, instead of for a single hundred and thirty foot plane. And the many details are worked out (using standard parts) with the American builders of large tents, instead of the Bessaneau details.

The type of hangar we finally adopted as the strongest and most serviceable has a center ridge to form a well pitched roof. There are sixty foot wide doors on two sides with cables to support the door curtains and two separate cables to carry the roof span. This type hangar can be changed in all dimensions to accommodate two, three or four planes of any size. The ridge is carried on poles far enough apart to give

wide clearances for the tails of the planes which pass between them. The all-important question of guys is insured by a double set, one independent of the canvas and the other attached. Every detail has required careful study and we have benefited from the fault and failures as well as the successes of various tent hangars that have been used by the U. S. Army and Navy and four foreign governments in military flying.

It is always possible to heat a tent even in the coldest weather. It can be done with safety by using oil burning heaters. The white canvas roof and walls' allow ample daylight to pass through and electric lighting is very well supported from the tent poles. The hangar floor space provides for two working or supply storage areas of about fifteen by twenty-five feet, which are outside the areas needed for planes. One important feature is a set of wall poles and guys which are for emergency use in reinforcing the door curtains and the roof anchorage, in case of heavy storms. The tent is designed to stand a seventy-mile wind or a foot of snow on the roof and can ride out a hundred mile gale safely.

### BUHL-VERVILLE AIRCRAFT COMPANY

THE announcement of the formation of the Buhl-Verville Aircraft Company just a year ago this month heralded a significant milestone in Detroit as an aircraft manufacturing center. Recently their first Detroit-built flight model was successfully flown at Packard Field and the plane will be put into production immediately.

The bringing of Alfred V. Verville, one of the leading pioneers and airplane designers in the country, to Detroit by the Buhls, to form the Buhl-Verville Aircraft Corporation was, in a sense, a home

coming for Verville, who had built the first airplane in Detroit ten years ago—a flying boat, and also one of the first metal nacelle pusher type airplanes, the latter convertible for land and water flying.

These projects were carried out with the financial assistance and backing of Mr. Herbert Book, owner of the Book-Cadillac Hotel and Mr. Corwin Van Husan.

For the past six years Mr. Verville had been in charge of the racing and pursuit design section of the U. S. Army Air Service. During this time Mr. Verville directed the design of the U. S. Verville-Sperry messenger plane, the U. S. D-9, the Verville-Packard racer, the Verville-Sperry racer, the U. S. D-4 ambulance plane, the V. C. P-1 and U. S. PW-1 pursuit planes. These pursuit planes were the forerunners of the modern American pursuit planes and embody features which were originated in America, and which were subsequently used in our standard military pursuit planes, as follows:

Fuselage dropable gas tank, welded steel tube fuselage, welded steel tube tail surfaces, gas line shearing mechanism, tunnel radiator, deep cartridge core radiator, tapered wings, streamline rudders, concealed fittings for wings and control surfaces, faired lower wing butts, streamline spinner, faired fuselage nose, flush type exhaust manifolds, cabane N strut, compensating drag and antidrag lift truss, etc.

Mr. Verville is also the holder of numerous airplane patents. In 1918 he was sent to France in charge of a special mission by U. S. Air Service to study airplane design. In 1921-22 he accompanied General Mitchell on a tour of inspection of European aviation for the U. S. Air Service. He was awarded a certificate of merit by the War Department for the design of pursuit planes. He was also a technical adviser to the congressional committee of inquiry in the U. S. Air Services in 1925. His racers won the 1920 and 1924 Pulitzer races.

Both Lawrence D. Buhl and Arthur H. Buhl, President and Director respectively of the Buhl-Verville Aircraft Co., have been prominent in Detroit's financial and industrial growth for years. Besides being prominently associated as directing officials of several of Detroit's financial institutions such as First National Bank of Detroit and The Detroit Trust Co., they are actively at the head of such well-known concerns as the Buhl Land Co., Buhl Stamping Co., Buhl Malleable Casting Co., Buhl Sons Hardware Co., Parke, Davis & Co., Detroit Terminal Warehouse Co., and the Detroit Copper and Brass Co.

The operations of the Buhl-Verville Co. are being carried on at present in the plant of the Buhl Stamping Co. at 2730 Scotten Avenue, Detroit, Michigan.



Henry Ford receiving from Irving W. Glover, Assistant Postmaster General, the first sack of air mail to be sent from Detroit to Cleveland. At left, Gov. Groesbeck of Michigan. Second from right, Capt. Edward Rickenbacker.

### A FLORIDA PROPOSITION FOR A BUSINESS MAN

UGE profits are being made in Florida real estate.

Naturally, you would like to participate, if only in a modest way.

The citrus industry is very profitable, and the amount of land suitable for this industry is very limited.

An investment in citrus land at present prices will pay you a very handsome profit.

We are developers of agricultural land in Lake County, Florida, up in the rolling hills and silver lakes, where the beauty of the scene is rapidly being further beautified by its wonderful citrus groves and comfortable homes.

We will mail you a booklet on request that will tell you in a modest way of our activities. You will be interested, as it will tell you how and why you can make money in Florida.

We make no wild promise of a million to be made over night—just a ground floor business-like proposition.

Florida is the most discussed State in the Union today. Everyone is anxious to know the REAL facts. These will be presented to you convincingly. Analyze them carefully and then balance the wondrous opportunity offered with the welfare of your family, your own welfare and your future.

Let us hear from you, and should you come to Florida be sure to make our offices your headquarters. We will do everything in our power to make things comfortable, and give you a hearty welcome to the Land of Sunshine and Golden Opportunities.



#### NEW ENGLAND NEWS

By Daniel Rochford

A LL too many people have disregarded the aviation possibilities of New England up to now. The only landing place outsiders think we have is the one the Pilgrims used. And though the Bible says to build your house upon a rock there is no suggestion that one should land a plane there.

Recently a high official in one of the largest aircraft factories in the country spent about ten days in Boston going over the air situation of New England. He stated that he looked for the success of commercial aviation in these six states in a bigger and more immediate way than in almost any other part of the nation. For in New England we have communities of well-to-do people separated by difficult railroad connections or long coastal ship trips. What is an all night ride from Boston by rail is three hours by plane. The seacoast towns of Maine, Cape Cod with its tremendous real estate boom interesting not only New England but New York and western capital, the inland lake towns and resorts, all call for airplane service.

The difficulties are great here. But where are they not? The winter season shortens the flying year. Yet there has been almost daily flying from the Boston Airport. Hartford has one of the finest landing fields in the country and has been active more or less all winter.

The Colonial Air Lines, Inc., have announced that they will begin their contract air mail flights between Boston and New York in May.

The Boston Airport Corporation are to conduct a school, do passenger, freight and advertising work using Travel Air planes.

Another company has leased a field at Weston, Mass., and are rebuilding eighteen JNs this winter for spring sale in New England. Several independent operators of seaplanes will again be active at coastal points.

Even the local N. A. A. chapter has taken a new lease of life and has held its first joint monthly dinner with the Aero Club of New England. Work in the colleges has been undertaken with an enthusiastic flying club at Harvard as one of the tangible results of the aviation enthusiasm they are spreading abroad.

The Reserve Officers of the Air Service have formed a club to further both military and commercial flying of all types. In the state legislature in Massachusetts bills have been drawn up to provide a fifteen year extension of the ground lease of the Boston Airport land to the federal government at the present annual rental of one dollar and to provide an annual upkeep appropriation for runways, etc., by the Bay State. Except for a new War Department order restricting reserve pilots to twelve hours flying in three months, which was expected to be rescinded for the First Corps Area, reserve flying for 1926 promises even more than in 1925. The National Guard Air Services of both Con-

necticut and Massachusetts have more planes than in 1925 and expect to do more flying.

JANUARY AND FEBRUARY · FLYING

Boston and New England have had to do much of their January and February flying from arm-chairs due to heavy snows. In the second week of February two big storms piled snow about three feet deep all over everything. At the Boston Airport the runways were swept by winds which kept the drifts off them but unfortunately up against the hangar doors so that it was a week's job to clear away so the Jennies, DeHavillands, and Travel Airs could be hauled out. The last named have been stored in the government hangars by courtesy during the heavy weather. Their own hangars are a building project due for March rèalization.

Despite the weather Lieutenant Aaron E. Jones, instructor to the 26th Division, Massachusetts National Guard Air Service, flew twenty-four hours and twenty minutes in January, setting the month's record. Lieutenant Reginald D. Thomas, commanding the Naval Reserve Air Station at Squantum and winner of the Schiff Trophy last year, managed to fly only about fourteen January hours. The army regular and reserve pilots took their ships up on practically all good days. After the heavy snows, Lieutenant Robert J. Brown, Jr., installed skiis on a JN and flew it from the Airport. Lieutenant Frank C. Crowley of the reserves, head of the Aerial Photographic Service of New England, who ran up a pilot time total of over 500 hours last year, fitted up a commercial remodelled Jenny with skiis and flew it a little from the flying field at Weston just outside Boston.

#### NEW ENGLAND AIRWAYS SYSTEM

One of the most hopeful commercial aviation projects in New England history is the New England Airways System being pushed by the Boston Airport Corporation and the Travel Air Sales Corporation of New England. The basic idea, admittedly, is to sell Travel Air planes, but it will benefit all commercial flyers. Base operators at the larger New England centers have contracted to carry Travel Air ships and furnish ground service. Hartford, Boston, Portland, and Bangor have already been linked in the agency system. Regular and emergency landing fields throughout the six states are being grouped for the airways system. Reserve pilots from Boston have landed in practically all the fields in a fifty mile radius from Boston and individual pilots flying cross-country trips to interior points, to Cape Cod, New York, or Maine, have for the most part made it a practice to at least "shoot" every likely looking field. Their information is being compiled and in April an airways demonstration flight with Army, National Guard, and Navy ships coöperating with Travel Air and other commercial craft is to be flown around the air-

Travel Air itself will not operate any fixed passenger service. But by its agencies it can offer passenger service over fixed routes at any time with standard through rates, each operator ferrying his passengers over his leg of the flight. Thus the operator need not send his plane too far from his base, and business can be handled much more expeditiously. It is a good idea and worth passing on to commercial operators in other sections of the country.

RESERVE OFFICERS TO HONOR BROWN

Boston deeply regrets the military necessity which takes Lieutenant Robert J. Brown, Jr., airport commander during the past year and former chairman of the Army World Flight Committee, to foreign service in Hawaii on April 22. Brown has made a remarkable record for both the amount of flying done under his control and the safety and efficiency record of the port. Their efforts to secure his retention here until fall having proved unavailing, the New England Air Service Reserve Officers Association is planning a farewell dinner in his honor. At this writing his successor has not been named. Local sentiment is emphatic for Captain Christopher W. Ford's appointment to the vacancy. "Cris" has been on duty in Boston for a year as assistant to the Corps Area Air Officer at the Army Base. During the war he shot down three enemy airplanes in combat and has had an equally distinguished peace time flying record since the

### DETROIT NEWS

A ERONAUTICAL activities in Detroit have taken a decided boost in the last few months. A great deal of interest was shown in the airplane exhibit at the Detroit Automobile Show, which consisted of The Buhl-Verville Airster and the Hess Aircraft Company's OX5 five-passenger plane.

Commercial flyers see the signs of progress all around them and are preparing for an unusually busy season.

A. Markiewicz has purchased an OX5 Standard and is getting it ready for use in the spring.

Pilot Taylor, formerly of Eastwood Field, is converting his OXX6 Standard into a five-place job, using a 260 h.p. Salmson motor.

The Hess Aircraft Company is preparing their five-place OX5 job for its test flight at Selfridge Field. This ship is creating a lot of interest among flyers in Detroit.

The Detroit Aviation School, which was organized August 1, 1925, was compelled to double its floor space after six months' operation, due to the popularity of their courses. They are just completing the first winter flying class of fifteen students, and at present have thirty-eight students enrolled in the various ground and flying courses. They will, no doubt, train from seventy-five to a hundred pilots this summer. H. J. West, formerly with the Royal Flying Corps. has been added to the faculty as instructor on motors and construction and Pat Gallup as flying instructor.

Several new air lines and manufacturing companies are being formed which prophesy that the industry in and around Detroit is going to be unusually active in the near future.

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### V.F.W. AVIATION POST

A N aviation post of the Veterans of Foreign Wars of the United States is planned according to Joseph C. Thomson, New York State Commander of the organization. At the present time there are a number of aviators included in the membership of the 150 greater New York posts of the organization but it is the belief of the officials that there are enough aviators who have seen service overseas to permit the formation in New York of an exclusively "aero" post.

The Veterans of Foreign Wars of the United States is the "Gold Stripe" veterans' organization, all of whose members fought on foreign soil or in hostile waters in defense of their flag and the ideals and principles for which it stands.

Applications for charter membership in the proposed aviation post or any inquiries as to details of the formation of the post may be obtained from Joseph C. Thomson, 32 Union Square, New York City.

### GARY AERONAUTICAL SOCIETY FORMED

THE pilots, mechanics, boosters and friends of aviation in Gary, Indiana, recently formed the Gary Aeronautical Society for the purpose of helping the Steel City to put its name on the air map of the United States. The officers of the society are: Charles A. Blank. pres.; Capt. Jack Yonge, vice-pres.; Beatrice Morse, sec'y.;

Lieut. Paul R. Maxwell, treas.

Gary is on the air mail route, also, Henry Ford's big all-metal plane waves it a "howdy do" twice daily. Therefore the Gary Aeronautical Society is back of the movement to establish a municipal landing field or airport. When this field is established in the spring it will be more than just an emergency field; it will be a field of which any wide-awake city should be proud. Pilots from the east will find this field quite to their advantage if for nothing more than saving them that few minutes of gas required to take them across the city of Chicago to Maywood. Transportation from Gary into the city of Chicago is equal to that from Maywood to Chicago.

The society plans to stage some big aeronautical events in the city during 1926 and do all in their power to make their fellow townsmen air-minded.

#### PLANE FEEDS BIRDS

T HE wild fowl of Blair County recently received manna from the clouds, when Edward Haynes flew over the county distributing food from a hopper attached to his machine.

Under the direction of Game Protector C. C. Brennecke and members of the Blair County Game, Fish and Forestry Association, he distributed 150 pounds of mixed feed and a bag of ear-corn on each of several flights. This is the first time that an airplane has been used for this purpose.

### BRITISH SCHNEIDER CUP TEAM ANNOUNCED

A FTER all, Great Britain will be represented at the 1926 Schneider Cup Race.
Mr. S. E. Saunders of Cowes, the famous British builder of racing motor boats, has announced his intention of building a team of challengers. Several other English firms also are discussing the building of a racer. Therefore England is assured to us as a contender even though the Royal Aero Club will not be entered as heretofore.

### ENGINEERS' CIVIL SERVICE EXAMINATION

THE United States Civil Service Commission announces the following open competitive examination: Associate Aeronautic Engineer, \$3,000; Assistant Aeronautic Engineer, \$2,400.

Receipt of applications for these positions will close April 30. The first rating of papers will begin March 15, 1926; thereafter papers will be rated as received until the close of receipt of applications.

The examinations are to fill vacancies in various branches of the Government service throughout the United States. Full information and application blanks may be obtained from the United States Civil Service Commission, Washington, D. C., or the secretary of the board of U. S. civil service examiners at the post office or custom house of any city.



### VACUUM OIL COMPANY SERVES PILOTS

T HAT the twenty-six branches of the Vacuum Oil Company are ready to render assistance to flyers at any time, any place and even in zero weather, was evidenced recently by their Grand Rapids representative, Mr. Ericson.

When the First Pursuit Group were returning to Mt. Clemens from Oscoda after their winter flying maneuvers, a Douglas C1 transport plane, piloted by Lieut. V. H. Burgin was forced down on Saginaw Bay, miles from shore, due to an overheated motor caused by a frozen radiator. Such a stiff gale was blowing that upon making a successful landing Lieut. Burgin was overthrown by the wind and knocked unconscious. Upon regaining his senses he found the plane about to be blown away. It was necessary to use his body as a block for the wheels to stop its progress. After making his way to shore, Lieut. Burgin secured help and anchored the plane for the night. If he had been seriously injured he would have frozen to death quickly as the thermometer on the plane registered fifteen degrees below zero.

The next morning upon learning of the fallen plane, Mr. Ericson immediately drove out on the ice of the bay and offered his assistance.

In spite of the zero temperature and a strong, biting wind, Lieut. Burgin stayed with his ship to protect it from harm and



Mrs. J. F. Irwin and the 20 h.p. Meteormotor designed for light planes.

from blowing out to open water. By the time Mr. Ericson arrived on the scene, which was simultaneous with the arrival of the reserve plane, Lieut. Burgin was nearly frozen, having had nothing but some fish to eat and no sleep. After transporting hot water and alcohol to the rescuers, he took the pilot to his home and refreshed him for his return journey.

The following is a list of the Vacuum Oil Company's branches where assistance to flyers will be rendered gladly: New York, Boston, Buffalo, Philadelphia, Albany, Pittsburgh, Portland, Springfield, New Haven, Chicago, Minneapolis, Des Moines, Indianapolis, Detroit, Milwaukee, Peoria, Grand Rapids, Fort Wayne, Kansas City, Dallas, Oklahoma City, St. Louis, Houston, Wichita, Fargo and Sioux City.

### FLORIDA AIR MAIL CONTRACT AWARDED

P OSTMASTER GENERAL NEW has awarded the contract for operating air mail service from Atlanta Ga., to Miami, Fla., via Jacksonville and Tampa, to the Florida Airways Corporation. Reed W. Chambers is president of the corporation. During the World War he was decorated four times with the D. S. C., with the French Legion of Honor and three times with the Croix du Guerre. John Harding, Jr., who made the round the world flight, will be in charge of maintenance of the company.

The bid of the corporation was for 80 per cent of the revenues carried. Under the terms of the contract, the service will begin operating from Jacksonville to Miami, April 1, 1926, and it will be extended to Atlanta, Ga., not later than June 1. The distance covered will be 664 miles each way.

Fourteen planes will be used by the corporation in transporting the mails over this route, ten of which will be employed at once and four held in reserve. They are all of the metal Stout type, equipped with Liberty motors and capable of maintaining 120 miles an hour.



Interior view of the RB2 Transport plane as flown with Essex coach, office equipment and eight men.

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### NEW FINISH SAVES TIME, SPACE AND EXPENSE

F aircraft production reaches the amazing figures which the recommendations now being made to Congress and other factors indicate, the finishing rooms of the industry are apt to be greatly crowded during 1927.

To meet such a situation, Valentine & Company are offering a new and extremely iast drying finish, Nitro-Valspar.

With this new product, which is a highly developed nitrocellulose lacquer, all coats required in aircraft work can be applied if desired in a half-day or less, as compared with a week or more when several coats of varnish are used.

It dries almost as rapidly as it can be applied to the surface being coated and produces a film which is at once tough, durable and proof against water and weather. The coating is hard and difficult to scratch or mar and its adhesive qualities are equal to the best varnish, but the film formed is much thinner and correspondingly lighter than varnish.

Practically any color is available in Nitro-Valspar and it is applicable to wood, metal and fabric surfaces. In no sense is it a substitute for wing dope, however. In fact, great care has been taken to prepare it in such a way as to avoid the shrinking qualities which are essential in wing dope, but which make

for short life when applied on wood or metal surfaces exposed to the elements.

It can be applied in place of varnish as a protective coating over wing dope and has the advantage not alone of greater durability but of not requiring removal around a patch when the latter is applied to repair a torn wing.

Rapidity in finishing made possible with Nitro-Valspar brings with it the attendant advantage of lower labor cost and smaller investment and interest charges on spaces devoted to finishing, for craft which normally would have to stand in the finishing room for several days are ready for shipment in a fraction of the time ordinarily required. And of course no artificial equipment is needed.

Best results in its application are obtained by use of spray equipment, but it can be brushed on if desired. One coat of Nitro-Valspar Primer, one or more of Nitro-Valspar gunglaze and about three coats of Nitro-Valspar Enamel are recommended, but under certain conditions some of these coats may be omitted.

It is furnished clear or as pigmented enamel. Its makers assert that it is the only clear nitrocellulose lacquer which possesses adequate adhesion and flexibility for use on wood or metal under the extremely severe exposure to elements and to rapid temperature changes to which aircraft are subjected.

Valspar Varnish, Valspar-Enamel and Valspar Varnish-Stain, long standards products of Valentine & Company, are being used widely in the aircraft industry today, as heretofore. They are recommended especially for field work and finish where spray equipment is not available, while Nitro-Valspar is used to best advantage in manufacturing and repair plants outfitted with spray equipment.

Nitro-Valspar is an outgrowth of a finish first developed by Valentine & Company for use in finishing seaplane hulls during the war. This nitrocellulose product, afterward termed Valenite, was needed because up to that time a day was required to dry each coat of varnish employed and something had to be done to reduce this time. With Valenite it proved possible to finish a seaplane hull in three hours while before it had required six days! Although Valenite proved extremely durable, was absolutely waterproof and dried almost as fast as applied it was much too hard to be rubbed down to an attractive finish.

Research work continued since the war has overcome this disadvantage and brought many other improvements. In the meantime the automobile industry was quick to recognize the advantages of nitrocellulose finishes and today Nitro-Valspar is being used by many large automobile manufacturers. It is also ready for similar application in the aircraft field.

Valentine & Co., 456 Fourth Avenue, New York, offer to send upon request pamphlets giving detailed information on Nitro-Valspar and Valspar.

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### ROBERTSON CORP. TO ENLARGE PLANT

THE Robertson Aircraft Corporation are planning to enlarge their plant at Anglum, Mo., in the early spring and to construct several more buildings to house their material. They are now busy rebuilding five D. H.'s to be used on the St. Louis to Chicago Air Mail line which they are to operate beginning April 1. They have also completed a D. H. for National Air Transport, Inc., to be used as a pilot's test ship.

Last year the Robertson company sold \$112,000 worth of airplanes, motors and parts, and are confident of doubling that amount this year. They attribute their successful operations, first, to their location in the center of aviation activities; second, to the fact that the three brothers are all pilots, having been aviators during the war and are all in the business working towards one common end; and third, to their endeavor to treat everyone fairly, which is evidenced by numbers of satisfied customers.

#### BURGESS FIELD

By LIEUT. R. S. ISIMINGER

B URGESS FIELD is situated about three miles south of Uniontown on the Fairchance-Morgantown, W. Va., state highway, a landmark being an S curve in the highway just as the northern edge is approached. It forms the dividing point between the good

and the bad of the Model Airway system to the east and west. Situated at the base of the famous Chestnut Ridge in the Allegheny mountains, it is rapidly developing into one of the most important fields of the Airways System.

As a result of the crash of Lieut. George Howell Burgess and his two newspaper companions in October, 1925, at New Salem, near Uniontown, the members of the Fayette County Reserve Officers Association, who had realized for some time the need of a good landing field at that point in order to avoid just such an accident, at once took strong action in securing a suitable field.

A committee composed of representatives of the Chamber of Commerce, the Rotary and Kiwanis clubs, the Merchants Association, the American Legion and the Reserve Officers was formed; and W. P. Schenck, secretary of the Chamber, was authorized to lease two pieces of property containing about 60 acres, lying south of the city for the purpose of establishing the landing field, each club and organization bearing their proportionate share of the rental.

The property was leased for the period of one year and on November 21, 1925, with Brigadier General Fechet, assistant chief of the Air Service, as the honor guest a dedicatory luncheon under the auspices of the Reserve Officers was held at the Uniontown Country Club.

Shortly after the dedication, the Burgess Field committee turned the project over to the management of three Reserve Officers, Lieuts S. F. Stilwell, J. S. Brown and the writer

The field is a municipal one, being open to pilots in all branches of the services as well as to commercial flyers. In fact any pilot flying over this section of the country is welcome to land at the field where everything possible will be done to make their visit a welcome one. Information regarding the field will be furnished gladly by addressing me at P. O. Box 1193, Uniontown, Penna.

Knowing the valuable location of the field for weather observation purposes, the Signal Corps of the United States Army is establishing a meteorological station at the field, quarters for the detail having been provided free of cost for that purpose by the community committee. At present there are two enlisted men detailed at the field who forward all weather reports by telephone to Langin Field, Moundsville, W. Va., from which point it is broadcasted by radio. With but one ultimate object in view and equipment already on the way to fully establish the weather station, members of the local committee are working toward the stationing of hangars, machine shops and other requisites of the first class landing field before summer is far advanced.

Plans are now under way to make the local field one of the primary community projects. An air circus, the first ever to be held in southwestern Pennsylvania, is being planned by those in charge of the field.





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### BOYS MODEL CONTEST

BOYS' model airplane contest is to be A held by the Aero Club of Pittsburgh at its club house grounds at Rodgers Field in May. Rules have been drawn up by the following committee which was recently appointed by the president, Raymond M. Marlier: Halsey R. Bazley, chairman; John J. Feery; Frank Kinnard; Lewis B. Lawrence, and Earl T. Moores.

The contest is open to any boy uot over eighteen years of age. Many valuable prizes will be presented to the winning contestants and no entrance fee will be charged.

The Aero Club has felt that such a contest would be of inestimable value as a means of educating the younger generation in the. fundamentals of aeronautical research and thus fill a long felt need.

The manual training schools, libraries and Boy Scout organizations of Pittsburgh are cooperating in furthering this contest.

The Board of Governors of the Aero Club which is fostering this contest are as follows: president, Raymond M. Marlier; 1st vice-president, Joseph M. Slater; 2nd vicepresident, Robert A. Laedlein; 3rd vice-president, William W. Booth; secretary, Ray A. Tucker; treasurer, Louis T. Barry. The Board of Governors are: William E. Close; Theodore Taney; Jack I. Grow; John J. Feery, and H. Frank McCaffrey.

#### LUNKEN FIELD

OFFICIAL recognition of Lunken Field, Cincinnati, as a government reserve airport was recently taken when the Army Air Service placed it on its Model Airways system as a stopping point on the airway between Dayton and Louisville. Ships now flying on the regular model airways schedules will make the field a stopping point for reservicing.

The new field, which was opened last summer, is commanded by Major Edward L. Hoffman. It is only five miles from the business center of Cincinnati. When moved from its location at Grisard Field, a suburb of Cincinnati, in July, 1925, only one hangar of the government station was in existence. During the fall and winter an additional hangar has been erected and a combination field office, officers club rooms, barracks for visiting flyers and supply depot for the field have been erected.

The formal dedication of the field will take place early in the spring with an air

#### BIDS INVITED

P ROPOSALS have been invited for the operation of the following contract air mail route.

Chicago, Ill., by Indianapolis, Ind., Louisville, Ky., Nashville, Tenn., and Birmingham, Ala., to Atlanta, Ga., and return, with such other intermediate stops as may be agreed upon later.

This route is open to bidders regardless of residence, and bids will be received at the Post Office Department in Washington until 12 o'clock noon, March 27, 1926.

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Complete, accurate scale drawings, with Building-Flying Instructions for DeHavilland, JN4D-2, NC-4, Bleriot, Taube or Nieuport types, sent for 25c. each; stamps or cash.

25c. each; stamps or cash. Largest and most complete Catalog of Model Aero-planes, Parts and Supplies, 5c. postpaid, Included free with any plan ordered, The only properly equipped experimental factory in this country for Model Aeroplanes. Write us for estimates on your work.

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### SWALLOW SALES JUMP

M<sup>R.</sup> J. M. MOELLENDICK, president of the Swallow Airplane Manufacturing Company, is meeting with great success on his sales tour of Florida and the Southern States. In the past two months, Mr. A. B. McMullen, their distributor in Central and Southern Florida, has sold twelve Swal-

The first car load of Walter T. Varney's mail ships has been delivered to Boise City, Idaho, where the work of establishing the base for the Elko, Nev.-Pasco, Wash., Air Mail Line is progressing rapidly.

These increasing sales are very hopeful signs for the aircraft industry.

### DR. STEINMAN ON AIR-CRAFT COM. OF A. A. E.

THE Aircraft Committee of the American Association of Engineers has elected as member Dr. D. B. Steinman, C.E.,

Consulting Engineer of New York, Dr. Steinman is national president of the American Association of Engineers and is today one of the leading authorities on bridge design. He is a graduate of Columbia University in civil engineering and for two years was professor of aeronautics at the College of the City of New York. The present Aircraft Committee consists of the following Consulting Engineers: Leon N. W. Colin, M.E., A.E., chairman; James P. Welsh, C.E.; Dr. D. B. Steinman, C.E.

### ROSCOE TURNER'S FLY-ING SALESMEN

APTAIN ROSCOE TURNER has Charge of experimental flying for Mr. S. H. Curlee, a prominent clothing manufacturer of St. Louis, Mo., and an ardent aviation enthusiast. Turner's mission is to demonstrate to the clothing salesmen that travel by air is as safe as by ground and saves much valuable time. He makes two trips a year from St. Louis to different parts of the country, using a 3-place Standard and a 5-place Breguet.

Besides showing salesmen the numerous advantages that aviation offers them, Captain Turner employs aircraft to show real estate to prospective purchasers in Muscle Shoals, Ala.

### WACOS POPULAR

ACOS are in such demand that the Advance Aircraft Company have sold their entire production for the coming year. They are now producing six ships per week and expect to increase their production to nine. Six ships were recently sold to San Salvador and several to the Fairbanks Company, Fairbanks, Alaska.

The new field which the Advance Company now owns is much larger than their previous one, and can accommodate any plane from a Martin Bomber down or up, as the case may be. It is located to the north of Troy, but within the city limits so as to make transportation to the plant un-

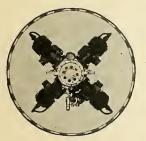
### NATIONAL BALLOON RACE AT LITTLE ROCK

HE 1926 National Balloon Race for the Litchfield Trophy will be held at Little Rock, Arkansas, April 29th, under the auspices of the Little Rock Air Meet Association. Three thousand dollars in cash prizes are now on deposit as a special prize fund. The race will be for 35,000 cu. ft. balloons and hydrogen will be supplied gratis by the Little Rock Air Meet Asso-

The entry list is limited to 8 balloons and entries will be accepted in the order of their receipt. The winner of 1, 2 and 3 prizes, provided they have 80,000 cu. ft. balloons at their disposal, will be designated as the American team for the International Gordon-Bennett Race which will be held in Belgium, May 30th. Entries will close March 20.

### ETEORMOTO THE LIGHTWEIGHT CHAMPION

Model



No. 72

### Still the Pioneer

It was to be expected that the builders who in 1919 brought out the world's first successful light plane, would develop the ideal motor for the light plane—and now after four years of exhaustive experimenting offer the powerful little Meteormotor which world a successful world worker the powerful little Meteormotor which develops 20 h.p., weighs completely equip-ped only 60 lbs. and consumes but one and one-half gallons of gasoline per hour. Truly this is the ideal motor for the light plane and the price completely equipped is within reach of all who appreciate a motor of the highest grade.

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WOODSON EXPRESS TYPE 2-A

### Equal to the most severe punishment insuring safety. A safety factor of 8.

The fuselage construction is of spruce throughout, covered with ½" three-ply birch waterproof veneer. This construction will stand up under all weather conditions.

HAS A FINISH EQUAL TO A PIANO, WHICH MAKES IT VERY ATTRACTIVE TO PASSENGERS.

This type is powered with either the 260 h.p. Salmson water-cooled radial or the Wright 200 h.p. air-cooled radial. Has the same performance with either motor. A SEATING CAPACITY OF FOUR, OR A PAY LOAD OF 600 LBS.

Can be successfully operated from a field 800 feet square Will land in 500 feet and take off in 150 feet with full load.

Price with Salmson engine, \$3500 f.o.b.

AN EXCEPTIONALLY WONDERFUL PLANE FOR THE MONEY

Orders must be placed now if delivery is required soon.

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#### AIR-HOT AND OTHERWISE

(Continued from page 120)

be frank and honest.

Now put all the words which I have written into one of those well known arrangements known to newspapers as cross-word puzzles and strive to get the answer. It won't be hard to find. It will be a sentence, when completed, and condensed into good English. It will read "Conspiracy against the Air Arm by all the Old Time Fighting Forces."

That, in plain words, is what exists in Washington. Now let's leave Patrick for a while, much as we may hate to, for he must feel lonely in an Army which is operated by a War Department so utterly indifferent to his suggestions. It will remain thus—until we have another war which the parlor soldiers don't know what to do with. Then the War Department will send a hurry call for both Patrick and Mitchell.

Now let's find out who does these things—to them and to all of us. Inquiry, diligent and careful, brings the answer, the Army. The Army steadfastly dishonors its own children, defying scornfully its real bosses,

the people.

In civil life we have a penalty for that peculiar brand of parenthood. When we run across it we send for the Society for the Prevention of Cruelty to Youngsters. But there isn't a Society for the Prevention of Cruelty to Patriots. No; there is no closed season for the patriot in Washington. Anybody may shoot at any one of 'em at any time of year. "Have you shot your patriot this morning?" is believed to be a regular salutation among War Department heads. The cabinet minister or bureau chief who must admit that he has not so much as fired at one is very little worse than he whose aim has missed.

But to answer our inquiry "Who does this?" by saying that it is "the Army," pits a kink in thought, for Patrick is an Army man and Mitchell used to be until disowned. So it cannot be the man in uniform and full of work whom we first think of when we say, "the Army." It must be the War Department. So we must now inquire, "Who is the War Department?" Well, Weeks was Secretary of War when Patrick's first report was utterly ignored and now, when the second effort of this able general is treated similarly. Davis has succeeded him.

It has been proverbially true in Washington that recent War Department secretaries have thought mostly about politics, turning to the business of their nominal jobs when there was nothing in the other field to do. Secretary Weeks' letter to the President asking him not to reappoint Mitchell as Assistant Chief of the Air Service remains a record of his mental state which grins nastily at him out of the files.

A careful study of the available evidence fails to reveal the slightest sign that Secretary Weeks ever had a moment of air-mindedness during his entire sacrificial service as a patriot in Cabinet office. Not only that, but he seems to have employed psychologists to spot air-minded officers as they approached the holy portals to his office and shoo them away. Why should an American Secretary of War bother with what the nations on both sides of us are doing? Sheer waste of time. What fools these foreign experts are, anyway, when they proclaim that nations which are not airminded are likely to be licked in the next war! Hot

dog! Why, Uncle Sam, without a single plane, could lick the world with one hand tied behind him!

Which is approximately what the Kaiser thought about his Deutschland which is not at present über alles. And the Kaiser now sojourns in Holland where the other cheeses grow.

But of course things changed when Weeks stepped out and Davis came into the Cabinet. You bet they did. Apparently Secretary Davis is wasting even less time on the air than Weeks gave to it.

I have no wish too quickly to condemn this estimable gentleman. It's a hard job. There are so many politicians to be seen each day, so many dinners and receptions and all that sort of thing to fill the sad, mad nights, it's such an effort to roll logs for one's constituents up Capitol Hill and to help every friendly Senator and Congressman roll his, besides, that the poor man who is American Secretary of War hasn't any time to give to air beyond issuing orders that every airman shall be given the air if he comes whizzing round the well guarded secretarial door. These flying things so often are equipped with stingers that they must be kept away.

I say that there exists a grim conspiracy to keep America impotent in the air. I do not get ridiculous and charge that the conspirators are in the pay of England, Japan, Russia. Czecho-Slovakia, Roumania or anybody else outside the country. But it is none the less a grim conspiracy, a conspiracy which is anti-patriotic, a conspiracy which should call down on the heads of the conspirators from the determination of their fellow citizens a very serious penalty.

If the officers of the General Staff, if the experts of the War College, if the Army men and Navy men and all the others of the old, established services, should go out on dark nights to slash the wings of our few planes, puncture their gas tanks and set fire to their hangars they would be following a course no more actually anti-patriotic, no more definitely and truly treasonable than that which evidence of this conspiracy indicates that they are following now.

When T.R. was on earth, God bless him, he insisted that such Army officers as could not ride their horses should forthwith ask to be retired and if they did not ask should have retirement thrust upon them.

If he were still alive and now in power he'd make short work of this collection of anti-aircraft big political and military bureaucrats that now dominate the national capital. One thinks with some amusement of the consternation which would convulse Washington if some morning from the White House the order should be issued that every Army officer and every Naval man of rank should forthwith demonstrate his knowledge and ability to pilot a plane as the Army men were called forthwith to prove that they could ride on horseback. With mental ears I hear loud screams of bitter anguish from strong men. I hear shrill wails of consternation from the venerable dames who, by virtue of their wedlock to epaulettes and buttons with or without brains and progressiveness, who after such an order would have to let the wives of younger, more active and more modern-minded men have some sort of a social look in, running the risk by letting this occur of having slim young beauty displace comfortable if plump or haggard middle age and venerable if kittenish antiquity.

# O X 5

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\$1.39 per gal.

Acetate, fresh new stock, fine commercial grade, drum lot FOB New York City—

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Aluminum pigmented acetate, the very best quality, 42 gal. barrel lot—

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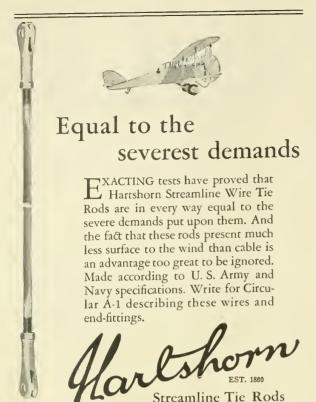
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(Continued on next page)



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### WESTERN AIRPLANE CORPORATION

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# PLANE BUY WORDS— TRADE FINANCIAL DE MARK PROPELLERS HAMILTON AERO MANUFACTURING CO. 50 Keefe Avenue, Milwaukee, Wisconsin

(Continued from preceding page)

These ladies I respect profoundly but I do not count them adequate defense of the United States. Their social prominence and the order of their procedure is not fundamentally essential to our preparedness against armed attack.

As the appropriations are pared down in the big building there on Pennsylvania Avenue, the parers sing a song of a saved sixpence. The same patriots who wag their heads and worry about saving money when it comes to making us an entity in the air will not hesitate to spend—did not hesitate to spend, indeed—\$35,000 of the people's money for the mere purpose of court-martialing Col. Mitchell whose sole object was (as it is now) to protect and save the taxpayer, putting this country where it ought to be—in a safe position in the air.

The effort to squelch General Patrick recalls the effort to squelch Admiral Sims who never liked the motion of a rocking chair on battleships and so never took that kind of furniture to sea with him. Also when on land he much disliked the taste of gags between his teeth. So he was violently criticised and finally he retired amidst too few of those expressions of gratitude which should have been his portion from the people of America. Officialdom in Washington had it in for Sims. Incidentally he found it satisfactory to decline the usually coveted D. S. M.—because he didn't want it as a gift of Washington. He had accepted many honors from foreign countries wherein conspiracies against national defense are automatically punished as high treason. He had a tongue in his head and courage in his heart, had Sims (like Mitchell and like Patrick) so he was charged with everything, from indiscretion to pro-Britishism, the latter being an offense of singular momentousness because, forsooth, we happened at the time to be fighting side by side with Britain against Germany. And, to make matters worse, Sims, after war was declared, insisted upon fighting.

Who is responsible? Perhaps someone even bigger than the bureaucrats. I am quite sure that we would all be worried if we found that influences representing many sordid money-millions are now opposed to using national funds upon aircraft and have managed to take over the American defense command.

But give the matter just a little thought. We have examined some of the amazing reasons why the Army officers whose age has crept on them and whose intelligence and patriotism have not increased with their years, should turn their thumbs down on the Air Service. It's too dangerous for soldiers to consider calmly—that is, for soldiers, of the rocking chair variety to think of without shudders. They feel that they, like wine, are better in the wood-chairs rather than saddles or the metal seats of aircraft.

But I cannot get my mind off Patrick this month. He is the sort of able fighting man who, if given a chance to do what he could do, what he would love to do, soon would be "General Pat" to every American boy upon the streets. That wouldn't please the bureau lords in Washington. Popularity must not be hung round the neck of anybody who does not respect a rocking chair. It never will adorn the neck of anyone who does. Therefore the Army must remain, as long it has been, without a single notable figure. Apparently revised tactics read: "If anyone gets popular, court-martial him."

### "HELL'S BELLS" O'NEIL

(Continued from page 138)

"'Why?' asks the Kid, innocent like.

"'For taking a woman up in a government Jenny. That's why!' says the Pink Boy, biting out a couple of gold fillings.

"'Who'd I take up?'

"'My fiancée-that's who!"

"'Humm,' says the Kid, 'you going to crime me for that?"

"'I sure am, you four-eyed sump swabber.'

"'Humm,' says the Kid, 'your girl will love coming up as a witness, won't she?'

"The Pink Boy stares and gulps. 'Never mind that,' he says.

"'Sure I'll mind it,' says the Kid. 'That girl taught me more about flying in five minutes than you taught me all the time I've been here.'

"'How come?'

"'By dancing around the cockpit and kicking against the joystick.'

"'Humm,' says Pink Face.

"'And what's more,' says the Kid, 'I'm calling on her to-night and it'd look pretty bad if my hands were all roughed up by shoveling. And it would be worse if I told her you made me do it, especially as you've never taken her up. Wouldn't it?'

"Pink Face looks out the window and sees the light of day. 'Get to pieces out of here and fly,' he says.

As the Kid told me afterwards, if the girl had invited him to call, he'd 've cut that lobster out in fifteen minutes which is a way kay-dets have of doing or may I break my neck on roller skates. Which reminds me," said Hell's Bells, "of one of these here things they call an adjutant." (In the April Issue.)

#### WINGED WORDS

(Continued from page 125)

Bumpy: When the rising and falling currents of air are strong, the atmosphere is said to be bumpy.

POCKET OR AIR POCKET: A sudden falling current of air, called a pocket, causes a plane to drop suddenly.

Hole: Synonymous with pocket. Bump: Opposite of hole.

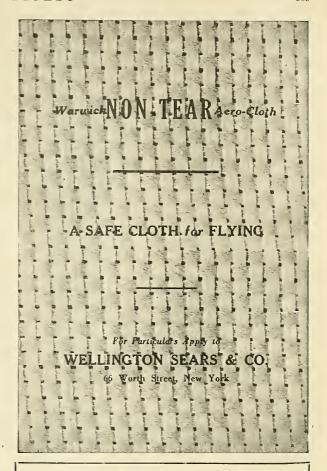
WHY SHE FLIES: Air is theoretically a solid matter. The propeller is built on the principle of an awl or screw which if turned must necessarily penetrate further into the material in which it is placed. It acts in exactly the same manner as a propeller on a boat. As the propeller is turned rapidly by the motor it pulls the plane over the ground attaining more and more speed. As the wings of the plane move through the air, the air hitting upon their entering edge is thrown upward as shown in diagram. The faster the plane moves the higher above the wing the air is thrown, causing a rarefication of air on the tops of the wings. This causes suction on the top of the wing, same having a tendency to pull the wings up and so cause the plane to rise from the ground.

ARITHMETIC: Several planes = one flight; several flights = one squadron; several squadrons = one

group; several groups = one wing.

The squadron is the basic unit and corresponds to a company\_of infantry, a troop of cavalry or a battery of artillery. In it are supposed to be somewhat over one hundred enlisted men. These men are divided into different groups, such as electricians,

(Concluded on next page)





### What Do You Know About Airplanes?

A FEW years ago men had to learn about aircraft from personal, costly experience. They had no one to guide them—no one to point out mistakes when they were made—and therefore years were spent learning what takes months now.

#### THOROUGH - PRACTICAL TRAINING

Today the American School of Aviation offers you these long years of experience and knowledge, which cost millions to acquire, in their new and fascinating Home Study Course in Practical Aeronautics which has been highly endorsed by prominent aviation authorities.

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No matter whether you have worked with airplanes all your life or are just beginning in the industry you owe it to yourself to send for a complete and detailed outline of this training and our new and inferesting free book, "Opportunities in the Airplane Industry."

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### Eastman Aero Camera, K-5

This latest Eastman Aero Camera is the simplest and most reliable instrument of its kind yet produced for all-around aerial photography.

Features include interchangeable 12" and 20" lens cones, anti-vibration suspension mounts, the





K-5 in Oblique position

Venturi tube which holds the film flat, the Graflex focalplane shutter, the single operation to reset the shutter and bring a new exposure into position.

Write for your copy of "Aero Cameras"

EASTMAN KODAK COMPANY ROCHESTER, N. Y.



(Concluded from preceding page)

mechanics, wood-workers, fabric-workers, cooks, etc., etc., all the way down to just plain hewers of wood and drawers of water. The squadron should have about thirty officers including the Commanding Officer, Adjutant, Flight Commanders, Operations Officer, Engineering Officer, Supply Officer and Flight Officers. As a matter of fact, however, the air service is at present very short of both enlisted and officer personnel, particularly the latter, and many squadrons are more liable to be found having two officers than having twenty. This is a condition which will be remedied when the people of the United States realize the importance of aerial protection and the benefits to be obtained through aerial transportation, for air service can be as valuable in times of peace as in times of war.

Mayhap one reason why Mr. Average Person hasn't in the past shown more personal interest in the air service and its problems may be the fact that when he listens to the talk of his aviator acquaintances, he knoweth not whereof they speak. If this small effort shall prove of value to him in translating the strange language of the air, it will not have been written in vain.

There are many other terms in use, but a great number of them are of a very technical nature or else their explanation would never pass the censor, so here endeth our third and last lesson.

#### **EUROPEAN AIR TRANSPORT**

(Concluded from page 123)

OTHER EUROPEAN ACTIVITIES

Among the other European nations engaged in air transport activities, the most active are Holland, Belgium, Hungary, Czecho-Slovakia and Poland, the estimated mileage flown by each being given in the table. Some Swedish routes are in operation as are some Swiss. The figures for the latter are particularly confusing as they include the mileage of all foreign airplanes passing over Swiss territory. The true mileage of Swiss air lines is considerably less than the figures given in the table, but no means are at hand by which the total can be properly divided to show the actual mileage flown by Swiss airplanes alone.

#### AIRPLANES ARE SAVING OUR FORESTS

(Continued from page 133)

have no place in the scheme.

The equipment consisted of three Liberty-motored DeHavilland airplanes which were flown by R. C. Freng, S. D. Priestly and myself. Each plane was equipped to carry an observer, and parachutes were provided for both pilot and passenger. Two canteens of drinking water and emergency rations were carried in the rear cockpit of each plane so that in the event of the plane being forced down in some inaccessible place, there was no danger of going hungry or thirsty, provided, of course, one had the presence of mind to watch where the plane landed, if emergency necessitated taking to the parachutes.

Map cases were provided in each cockpit containing maps of the district to be flown over. There were two kinds, one-quarter inch maps known as travel maps and one-half inch maps known as spotting or location maps. These maps are cut into township and section and quarter section squares and are of the contour type which show the peaks, valleys, lookout points, creeks, ranger stations and other landmarks. The creeks, lookout points, ranger stations, etc., are named.

Before the start of the patrol, fires already known and being fought are marked on the maps so there is no danger of duplicating the reports of preceding days.

When a new fire is discovered the course of action depends largely on the severity of the fire and conditions which might lead to its spread. The observer accurately marks down on his contour map the exact position of the fire, accurate to the quarter section if the observations are correctly made, as they usually are. Then he notes whether the surrounding timber is valuable and merchantable or whether it is cut over land or second growth timber or whether an old burn is ahead of the flames. The possibility of conditions growing worse if the wind makes a change is also considered closely. As a final check the observer may ask the pilot at what particular position his observation has placed the fire. If the locations coincide the patrol is continued, but if there is any doubt basic methods of location are employed.

The need of absolute accuracy in the report is shown by the fact that on it the forest supervisor decides how many men and what equipment must be taken to subdue the fire. Lookouts on various high points can locate smoke and tell where it is, but there are many blind spots which they cannot observe, such as in the bottom of draws and canyons and the sides of ridges away from the lookout. Being stationary they are handicapped by poor visibility, the result of smoke and haze. In the case of a going fire they can often see but one side of a fire line and if the smoke happens to be rolling in the direction of the lookout it is very difficult to estimate the condition of the fire.

In these instances the airplane patrol does its most valuable work. From the air we can tell everything about it and designate the exact spot where men should be sent to curb it. We often can tell what trail should be followed in to fight a new fire.

Once the fire is definitely spotted as a new blaze and we have it marked accurately on the map, we decide what should be done. If it is serious we immediately fly to the nearest lookout or ranger station and drop a message which the observer has prepared.

The containers for the messages are novel in themselves. They consist of a canvas bag about twelve inches long to which is attached a white canvas streamer about eight feet long and four inches wide. The message is placed in a clasped pouch, the whole canvas folded up and then thrown over the side after the plane has maneuvered for the best position for an accurate shot. The long white streamer makes it easy for the man on the ground to follow the message down, and on the ground it is conspicuous. The message bag is weighted at one end with one-half pound of sand.

If the fire promises no immediate danger of spreading we simply mark it, retain the data sheets and report it on landing to the supervisor on whose forest the fire happens to be. To do this we land at Newport, Libby, Kalispell, Grangeville, Missoula, Spokane or other points in the district.

In one instance two reports of fires were made by a lookout man to one of the supervisors in his district. He had believed from our reports that his section was clean. We had just flown in over that territory where the blazes were supposed to be and had seen nothing. We made our report to him. He was not satisfied and

(Concluded on page 176)

### SPECIAL AIRPLANE SALE

New Canuck—OX5 motor, spe-	
cial built job	000
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motor	000
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We will store any of the above shins free	e of

charge in fireproof warehouse, fully covered by insurance, until June 1st, on receipt of 50% of purchase price.

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Wanted—A Pilot—able to take full charge of Lincoln Standard plane. Permanent position. Sober and industrious. Big opportunity, but you have to work for it. Address Box No. 320, AERO DIGEST, 220 West 42nd St., New York, N. Y.

Learn to Fly!—Only \$100.—Our instructors of long experience, our modern training airplanes, and the best flying field in the Middle West make us the best equipped school in the country to teach you to fly properly. Be independent. There is more demand for men in this pleasant highly paid profession than in any other business. Aviation is in its infancy; it is the only business which is not overcrowded. Here is your chance for a real future. We have successfully and properly trained many good, thorough pilots. We have never had a student injured while in our school or in flying after leaving school. We teach them right. Enroll Now! Porterfield Flying School, operating Richards Flying Field, 71st and Davenport Road, Kansas City, Mo.

ol. VIII. No. 4

APRIL 1926

25 CENT

# ATRO DICEST



PROPAGANDA vs. PATRIOTISM

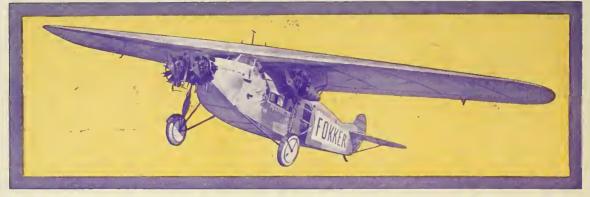
WHITEWASH IN THE AIR Says Congressman Prail

AIRSHIPS AS FIGHTERS

America's Zeppelin Expert

COMMERCIAL TRANSPORT Lessons from Experience

WILL THE PUBLIC PAY For Time Saved by Air?



This Fokker airplane, equipped with three Wright J-4 engines, is to be used by the Byrd Polar Expedition in their attempt to fly over the North Pole.

### Lieut. Commander Byrd Off for the Pole



CORRECT LUBRICATION for your

### AIRPLANE

A IRCRAFT engine lubrication presents some individual problems which are largely affected by the manner in which the installa-tion in the plane is carried out. In this connection, the following points must be considered specifically before the correct lubricant can be recommended:

Make and model of engine employed.
 Is lubricating system self-contained or are separate tanks provided for oil

are separate tanks provided for oil storage? If separate tanks are provided, what is their capacity? Is a scavenger pump used to return oil from the sump to the oil tanks? If such a "dry sump" system is employed, what is the length and internal diameter of the fresh oil feed pipe from the tank to the engine, and also the used oil return pipe from the engine to the tank. Are these pipes adequately protected against low temperature? In what manner?

ner?

6. Is the lubricating system of the "all-loss" type? If so, how is the fresh supply regulated?

7. Have any changes been made in the engine which would cause it to differ from the standard for its particular make and model?

The Vacuum Oil Company's Board of Automatics Engineers is at your

of Automotive Engineers is at your of Automotive Engineers is at your service. For lubricating recom-mendations on specific makes or models of aircraft engines, please write us covering the seven points

VACUUM OIL COMPANY

Again Mobiloil is chosen for a historic flight!

IEUT. COMMANDER BYRD and the members of the Byrd Arctic Expedition have chosen Mobiloil-lubricated Fokker planes for their Polar Flight. Their supplies will be conveyed to the main base at Spitzbergen by boat, and from this point, they will fly 450 miles, across seas not open to navigation, to establish an advance base at Point Morris Jesup.

From this advance base, within 375 miles of the Pole, exploration flights over the intervening territory will be made.

Lieut. Commander Byrd was in charge of the Aircraft Division of the McMillan Arctic Expedition and is a recognized leader in aviation. His present daring venture will add much to the world's scientific knowledge of these desolate faroff regions.

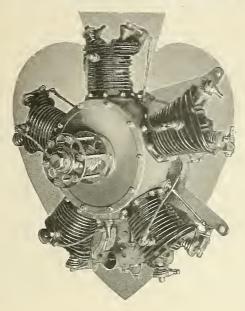
Careful preparations have been necessary to assure success to this Expedition. As was the case in the Round-the-World Flight, and other unusual air adventures, so in this flight, a realization of the importance of positive engine lubrication was the reason for the selection of Mobiloil.

Thus Mobiloil leadership is again emphasized. In your plane, Mobiloil will demonstrate why it is repeatedly selected for the most difficult and exacting flights.

#### VACUUM OIL COMPANY

61 BROADWAY, NEW YORK

### A MESSAGE TO AEROPLANE MANUFACTURERS



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### Detroit Aircraft Engine Works (Synd.)

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Write for full particulars.

Copt 6. 1. Victorbacks

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Lonyo Boulevard & Detroit Terminal Railway Detroit Michigan

### THE GOLD RUSH

To the Yukon in '96—

--Wide World Photos.

—and to Red Lake To-Day

### THE LARK PROVIDES "SPEED WITH SAFETY"

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Curtiss "Larks" have been purchased by the Patricia Airways and Exploration, Limited, of Canada, for the purpose of transporting prospectors and supplies to the newly-found gold fields near Red Lake, Ontario. The trip from the nearest railway station to Red Lake, is a difficult, dangerous, six-day journey by dog team. The "Lark," with two prospectors and all of their equipment, makes the trip in an hour, and almost before they have become comfortably settled in their seats, the passengers are deposited safely at their destination in the gold region.

That's "Speed with Safety" and it's a splendid example of the adaptability of the Curtiss "Lark" to even the most extreme requirements of commercial flying.

Write for the Curtiss Lark Series Booklet

CURTISS AEROPLANE CLINTON ROAD,



AND MOTOR CO., INC., GARDEN CITY, N. Y.





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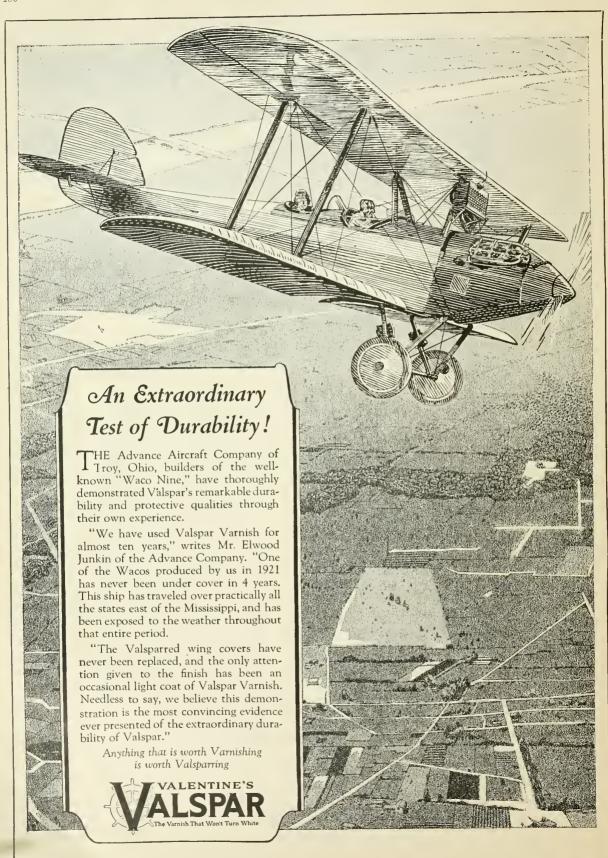
There is a du Pont Finish for every part of a ship that needs finishing . . . . which means that there is a du Pont product for every part of an aeroplane, including wing dope, paint, varnish and Duco . . . and each is the best that more than a century of research has been able to develop.

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# AIERO DIGEST

Vol. 8 No. 4

APRIL, 1926

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Niagara's Gorge Below the Cataract, Immeasurably Grand, Shares all its Secret Beauties with the Traveler by Air.



The 69th Congress in session. O Underwood and Underwood,

### WHITEWASH IN THE AIR

SUPREMACY in the air will be the next achievement marking the commercial and scientific progress of the nations of the earth. It will be of vital importance for the national defense or offense of the United States, should it

ever become involved in another war. We should no longer delay in taking steps to secure the supremacy to which we are entitled, by reason of our genius in mechanical development, our industrial progress, our commercial importance and our leading position as a world power.

America, the birthplace of the airplane, is lagging behind in this development. The question of the relative standing of the United States in air power among the nations of the world is largely a matter of opinion. It is clear, however, that our standing is not higher than third, nor lower than fifth,

among the nations. By every right it should be first. It is true the industry in other countries is subsidized by those countries. It is equally true, that, while the industry in this country is in an alarming and critical condition, it does not seek subsidies is cash. It does, however, demand a chance to live. It does demand less competition by the Government itself. If we are to lead the nations of the world, and hold the pace, this industry must be given opportunity.

At a dinner given by the New York Chamber of Commerce about three months ago, the President of the United States had this to say: "When Government

Ву

### Anning S. Prall, M.C.

Representative from New York and Member of the House of Representatives' Special Aircraft Committee



enters the field of business with its great resources, it has a tendency to extravagance and inefficiency, but, having the power to crush all competitors, likewise it closes the door of opportunity and results in monopoly."

Testifying before the Congressional Aircraft Committee, General Patrick, Chief of the Army Air Service, referring to the aircraft industry, said: "It has been absolutely declining over a period of some years."

About three years ago, Secretary of War Weeks appointed the Lassiter Board, composed of military experts of the highest type, to make an exhaustive study and investigation of this subject. On April 24th, 1923, this Board made its report. It was a fundamental document. It said our Air Services were in an alarming and critical condition. It said that measures had not been taken

in our country to keep step with the evolution of aviation. It said, "The aircraft industry in the United States at present is entirely inadequate to meet peace or war time requirements. It is rapidly diminishing under present conditions and will soon practically disappear." This has been verified, under oath, by the leading manufacturers in the industry.

The Lassister Board recommended legislation to be prepared for introduction into Congress. The Secretary of War and the Secretary of the Navy were familiar with the findings of this Board. They both agreed with those findings, but could not agree on the

division of the appropriation recommended.

Nearly three years have elapsed since that report was filed. But the proposed legislation recommended has never been presented to Congress by either the Secretary of War or the Secretary of the Navy.

In the meantime the Air Services of the country were the subject of many charges and because of the indifference of the administration concerning them, Congress, by the Act passed on March 24th, 1924, created a Select Committee of nine of its own members to investigate the Air Services of the nation. The powers conferred upon this committee were very broad. It examined more than one hundred and fifty witnesses. Its work extended over a period of eleven months and its report, consisting of five volumes of printed testimony, was filed with the Speaker of the House of Representatives during the first week of December last. As disclosures were made daily during the progress of this investigation, the press of the country was unsparing in its criticism and denunciation.

It was during this investigation, and before this Committee, that Brigadier General William Mitchell made his sensational charges which led to his demotion and transfer to Texas, subsequently resulting in court-martial, conviction and sentence and finally his resignation from the Service. With his departure the Government lost to the Service one of its most valiant and intelligent officers.

It was this Committee that disclosed the fact that the Army and Navy Services during the past five years (and in peace time) had spent over four hundred millions of dollars, of which only ten per cent went into procurement of new airplanes, engines and for remodeling old ones. That the Air Services of both Army and Navy, despite the expenditures of this vast sum, had deteriorated in equipment and in morale. That there is a lack of an established, defined policy in the maintenance of our air forces. That the use of airplanes designed and built in 1918 (eight years ago) and earlier constitutes a very large proportion of the machines used in the Army and Navy. That there is no uniformity of Army and Navy policy as to organization, equipment, control of personnel, procurement, design or use of aircraft. That there is a distinct conflict between the Army and Navy as to air activities in coast defense. That there is a wide divergence of opinion between Army and Navy as to the effectiveness of aircraft operating against surface vessels, and an equally wide divergence of opinion as to the value of anti-aircraft artillery operating against aircraft. That there is unnecessary duplication in the expenditure of both money and effort by the Army and Navy seeking to accomplish similar results. That the Navy system of promotion deprives flying personnel of opportunity for high command, and does not recognize that the aviation service is any more hazardous than the non-flying branches of the service. That there is a lack of airways, aircraft facilities, air terminals and lines. That no other country in the world that desires to be an air power does anything like the percentage of its own

business in its own shops that is done by the United States Government. That of eighty-eight members of the General Staff of the Army only two members have had actual experience in flying. That aeronautics is not properly represented in the General Board of the Navy. That officers are embarrassed in testifying before Congressional Committees for fear of disciplinary measures. Brigadier General Mitchell is an object lesson.

It was these startling revelations, uncovered and brought to light by this Committee, that threw both Army and Navy officials in a panic. Mitchell had been demoted and sent to Texas for his part in it. He had been court-martialed and returned to Washington for trial, and about this time was defending his charges. Aeronautics had its place on the front pages of the press.

The Secretary of War and the Secretary of the Navy were familiar with the situation. They, above all men, knew the true conditions. To act on the findings of the Lassiter Board, and of the Committee appointed by Congress, was to admit a bad condition existing in their respective departments, but it would have spelled order in place of chaos.

But despite the findings of the Lassiter Board nearly three years old and never acted upon, the President, on September 12th, 1925, in response to the joint appeal of the Secretaries of War and Navy, addressed them as follows: "Gentlemen: Your joint letter stating that, 'For the purpose of making a study of the best means of developing and applying aircraft in national defense, and to supplement the studies already made by the War and Navy Departments on that subject, we respectfully suggest that you, as Commander-in-Chief of both Army and Navy, appoint a board to further study and advise on this subject'."

And the President continued: "Your suggestion is one which already had my approval so far that last spring I had conferred with parties as to the advisability of taking such action."

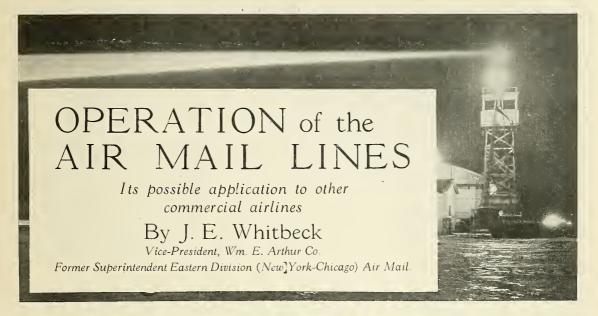
It was the same "last spring" referred to by the President that the committee appointed by Congress was daily disclosing the alarming and critical state of affairs existing in both Army and Navy Air Services. It was the same "last spring" that Billy Mitchell was startling the country with his testimony.

It was not necessary to appoint another committee to find what the trouble was, nor where it was—two committees had already pointed that out, one of them an official committee of the War Department, and the other an official committee of Congress.

It depended on what kind of a report was needed at the time. Evidently the only life-buoy in sight, under the circumstances, was the appointment of still another Investigating Committee—the one the President thought of "last spring." One that could step lively and make public its report before the report of the Committee appointed by Congress could file its report.

The report of this committee was due at the opening of Congress in December. The report, if it was the

(Concluded on page 235)



T the present time the Air Mail is operating the transcontinental service daily in both directions between New York and San Francisco and an over-night service between New York and Chicago in both directions nightly excepting Saturdays, Sundays and legal holidays.

The night service on a prearranged schedule between New York and Chicago is probably the most difficult project that has ever been attempted in aeronautics. Among the difficulties are 300 miles of mountainous and heavily timbered country across Pennsylvania, with weather conditions that change more rapidly than in any other section

of the United States; and about fifty per cent of the flying is done above low clouds and fog, out of sight of the ground.

The operation and maintenance problems are of especial interest at this time when many privately operated air mail lines are starting. Therefore I will endeavor to outline some of the most important things for a reasonably safe and regular operation.

### FLYING PERSONNEL

No matter how good your flying equipment may be, if you do not have thoroughly trained, capable pilots

y o u cannot obtain the edesired fresults. In selecting new pilots, the man who handles his ship in a busi-



Mr. J. E. Whitbeck

unnecessary chances is sought. However, he must be able to fly his ship and not let his ship fly him. To qualify in the Air Mail Service or in regular scheduled commercial operations, a pilot should have had at least 400 hours in the air, 200 of which should be back of a Liberty or a larger motor, and at least 100 hours should have been cross-country flying. A college education is an advantage as it has been found that the highly developed mind is less likely to make mistakes when quick decisions are required. A knowledge of navigation also is desirable. A pilot must be in average good physical condition, good eye-

ness-like manner without taking any

sight being the most important physical qualification.

It is desirable that pilots should have learned to fly before they were twenty-five years of age, as the young mind gets and retains longer the finer points of flying, just as a youngster may be taught how to drive a car much more readily than an older person. The "good flying life" of a pilot has not been definitely determined. After checking the records of eighty-seven pilots over a period of ten years, however, the following rule appears to apply to the average case: "If you learn to fly before twenty-five years of age you may reasonably expect twenty years of good flying life."

It is just as essential for a pilot to know his "run" as for a railroad engineer to know his curves, switches,



Hadley Field, the New York Air Mail terminal, illuminated at night.



Air Mail Pilot Dean Smith.

cross-o v e r s . signals, vards, stops, etc., and before a pilot flies mail he must be familiar with every emergency field, beacon light. weather signal, mountain range and their height above sea level, and the local weather conditions along the course. Pilot's runs average

about four hundred miles with a service stop at the middle of the run, or about every two hundred miles. They can fly four hours per day and three or four days per week without any indications of going stale.

The labor turnover of pilots is very low. Recently there was a period of nearly two years in the Air Mail without a single change of flying personnel. Forty-three pilots were on the payroll and more than three million miles of flying was done during that period.

#### FLYING EQUIPMENT

The efficient maintenance of planes and motors is the most difficult as well as the most important work. It involves a considerable amount of detailed work by thoroughly trained mechanics, with very careful supervision and inspection.

Planes and pilots are changed about every four hundred miles very much the same way that railroads change engineers and engines, and certain planes and pilots are kept on their own runs. When a plane arrives at the end of its run it is received by a crew composed of a crew chief, a rigger, an expert motor me-

chanic and a helper. First they all assist in transferring the cargo to the departing plane, then the motor mechanic proceeds to check the essential details of the power plant and its functioning. At the same time the rigger is checking vital details of the plane; the helper services the ship with fuel, oil and water under the direction of the crew chief and the amounts taken are very carefully checked against the flying time. After the crew chief's

O. K. the ship is gone over by an inspector, and when O. K.'d by him it is put in its assigned place in the hangar where it remains until two hours before its next scheduled trip. It is then brought o u t and completely checked again by another crew. It must also be O. K.'d by the chief



Air Mail Pilot "Steve" Kaufman.

mechanic before it is turned over to the pilot.

Air Mail records for the past year indicated that mechanical difficulties which caused forced landings occur at an average of once during every four hundred hours of flying. Thirty per cent of these mechanical difficulties are with the cooling system; twenty-nine with ignition; eleven with carburetion; eight with lubrication, and the balance with miscellaneous troubles.

The Air Mail planes average about eight hundred hours flying before major overhaul and rebuilding. (This includes planes damaged in accidents.) After about five hundred hours the fabric covering is removed by the field operating force, and the plane given a very thorough inspection. Only one plane failure has occurred in the last five years. That was the failure of a control stick where the steel tube was welded to the U-shaped fitting at its base.

There is a ship on the ground for every ship in the air and a spare motor is available for every ship in the air. The stock of spare parts carried at the operating field is very small as most of the spare parts are kept assembled into complete flying units, always tuned up

and ready to go in case of an emergency.

The number of spare ships and motors can be greatly reduced when modern equipment especially designed for the work is used; the Air Mail Service is still using left-over war equipment which requires a considerable amount of work to make suitable for Air Mail use and thus complicates the maintenance problems.



"It is just as essential for a pilot to know his 'run' as for a railroad engineer to know his curves, switches, stops, etc." This view shows the Martin Air Mail plane.

GROUND PERSONNEL

Ground personnel plays

the most important part in the operation of airplanes. It requires a thoroughly organized force of trained mechanics under careful supervision to obtain efficient results. The supply of good airplane and motor mechanics is not keeping up with the present de-

mand. The Air Mail has found it necessary to start training mechanics during the past year and it seems likely that commercial operations will have to train a considerable portion of the mechanical force, and it must not be expected that the training of a mechanical force and whipping it into a smooth working organization can be done over night.

An airway is on the ground and the performance and safety of it are limited by the efficiency of the ground personnel and the ground facilities provided.

#### AIRWAYS AND AIRPORTS

The terminal fields should comprise not less than one hundred and twenty acres and have runways at least twenty-four hundred feet long in both directions. Suitable hangars should be provided for the storage of the desired number, of planes along with the necessary space for office, shops, stock rooms, etc. If night flying operations are involved, all buildings should be floodlighted, sign board style, to give daylight perspective. Equipment should be provided for flood-lighting the flying field itself and the field should be outlined with boundary lights. An illuminated wind direction cone and a revolving beacon light which will guide the pilot to the field should be provided.

Accurate weather information is essential to flying operations. Each terminal field should be provided with thermometer, barometer and annomometer. A "ceiling light" should be employed to determine the height of clouds at night; this is done by pointing a concentrated beam of light upwards at a forty-five



Transferring the mail from planes at Reno, Nevada.

degree angle and using a simple method of triangulation to determine the ceiling.

Rapid means of communication for the dispatching of planes and sending weather information are essential and it seems likely that either telephone or telegraph lines along the

course with stations at about fifty-mile intervals will be provided for the more important commercial operations. When we stop to consider the facilities which the railroads have for the control and information of the engineers driving their trains it seems quite reasonable that some of these facilities will be provided for commercial aviation.

Beacon lights should be provided at one mile intervals along the airways. These lights should be automatic in their operation to the greatest extent possible in order to eliminate the cost of caretakers.

Emergency fields should be located from five to ten miles apart along the course according to the physical aspect of the country. A typical emergency field comprises about forty-five acres and is about two thousand feet long and eight hundred to one thousand feet wide. It should have the necessary drainage to allow safe landings during the wet seasons; it should be outlined with boundary lights and a revolving beacon and an illuminated wind direction cone should be provided. Radio direction finding should be developed to assist pilots when bad weather conditions render some of the beacon lights invisible.

At fifty-mile intervals signal devices should be located that will indicate to the pilot what the conditions are for the next fifty miles ahead, or to signal him down in case bad storms are ahead. A pilot should be controlled by signals very much in the same way that a railroad engineer is; however, it is not likely that it will be necessary to provide signals at the frequent intervals (Concluded on page 240)



Official Photograph, U. S. Army Air Service

"Neither snow nor rain nor heat nor gloom of night stays these couriers from the swift completion of their flight."

### WILL THE PUBLIC PAY?

URNING back the pages of history to the days of the canal and the early railroad, we find

BvRoy E. Russell, LL. B., A. M. from Pittsburgh the cost

bia to Philadelphia, a distance of 72 miles, was \$10; and would be \$42, at which price

that those who sponsored the newer methods of transportation met with much opposition from the public and from those interested financially in the older methods.

On September 11th, 1869, the Honorable Samuel J. Tilden was called upon to defend the railroads of that day before the Constitutional Convention of New York State. It is interesting to note a paragraph of that



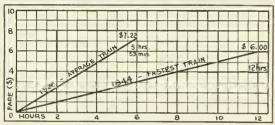


Chart A.—Comparison of passenger fares and time on the Boston and Albany R. R. between these two cities, in the years 1844 and 1925. The public today pays 20.3% more with a time saving of 51% over schedules of 82 years ago.

speech: "I do not think there is any just ground for the jealousy which appears to be felt in some quarters toward the railroad system of the country. It certainly has served the public with great efficiency and with incalculable utility. A new mode of intercommunication whereby the products of different soils and climates and capacities of supplying human wants are more rapidly or cheaply interchanged adds as much to the production of human industry as increased geniality of the climate or increased fertility of the soil.'

In a very few words Mr. Tilden has left us the trend of thought held by various factions of that day. It seems to be true that history repeats itself, for today aviation is having the same struggle to take its place along with our modes of transportation.

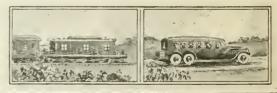
Again turning back the pages of history for more than another half century we find the same controversy existed between the sponsors of the canals and those who would sponsor the turnpike. While he was Secretary of the Treasury, Mr. Lathrobe's communication, dated at Washington, D. C., March 16th, 1808, complained of the exorbitant rates that had to be charged in order to properly support a post road, and used the Lancaster Turnpike as a basis for his argument. The total length of the turnpike to Pittsburgh was 320 miles, and the cost to transport a ton of freight from Columa barrel of flour would cost \$14 in carriage.

The question has always arisen: "Will the public pay the price?" The reply might well be: "The public has always paid a reasonable price in return for an improvement." Supporting this assertion, there comes the daily news from all parts of the country, and even from all parts of the world, of new air routes being opened. Capital is being sought and new ideas are being promulgated.

In 1808, Mr. Christopher Coller attempted to interest capital in a venture to build the Timber Canal. To help do this he issued a pamphlet, entitled: "Proposal of a Design for the Promotion of The Interests of The United States of America, extending its advantages to all rank and conditions of men, whether Monied. Landed, Agricultural, Commercial, Mechanical, or Manufactured, by Means of Inland Navigable Communication of a new Construction and Mode."

In the pamphlet is the following: "Monied men have always opportunities of applying their cash to advantage; but this will open a variety of channels for their further emolument. They may be stockholders in the company; they may purchase lots, and build houses and stores thereon, which they may sell, lease, or let to advantage. They may build barges, and by employing proper hands to work them, the money they may apply in this way may be turned to good account. These convenient situations may encourage many establishments of new manufacturers which the monied man may encourage by his assistance, and draw a profitable proportion to himself."

One hundred and eighteen years ago men were asking the same question: "Will the public pay the price?" Mr. Coller believed the public would pay a price suffi-



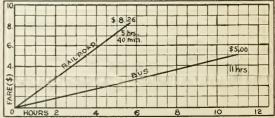


Chart B.—Comparison of cost and time on the New York, New Haven & Hartford R. R. and the Grey Bus Line be-tween New York and Boston, a distance of 212 miles. 65.2% more fare is paid to travel by rail for a saving in time of 48.5% over bus schedule.

cient to operate the canal; Mr. Lathrobe believed the public would pay for the canal service over turnpike service; and Mr. Tilden believed the public would pay for the service offered by the railroad in preference to the services offered by the canals.

The beliefs of these men were well founded. An analysis of rates paid by the public over a number of years shows that they have been willing to pay the price. The accompanying charts show some comparisons made of rates paid at various times. They answer the question as to whether the public will pay the price.

From a report made in 1862 by Mr. R. F. Lord, then Chief Engineer of the Delaware and Hudson Railroad, we learn that the average rate of charge per ton



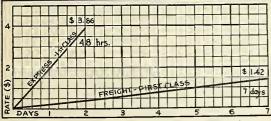


Chart C.—Comparison of cost and time between freight and express transit between New York and Chicago, using 100 lbs. as a basis on less than carload shipments. 48 hours allowed for collection, transit and delivery. 167.6% more is paid for express with a time saving of 73.3% over freight.

mile on the canals of the State of New York was 54 cents, while on the railroads of the State the average rate per ton mile was \$2.625. The average rate per ton mile charged by the railroads was 385 per cent more than charged by the canals per ton mile. The public paid the price in that day.

The fastest train that ran between Albany and Boston in 1844 on the Boston and Albany Railroad required 12 hours to make the run. This train left Albany in the morning and arrived in Boston in the evening. A train that left Albany in the afternoon stopped enroute for the night and continued its run the following morning. The advertised fare for this trip was \$6. The average time required today for the same run is 5 hours and 53 minutes and a fare of \$7.22 is charged. The public today pays 20.3 per cent more with a time saving of 51 per cent over schedules of that period. (Chart A)

A fleet of busses operating between New York and Boston, a distance of 212 miles, makes the trip in 11 hours; the fare is \$5. The average time of the New York, New Haven and Hartford Railroad is 5 hours and 40 minutes with a fare of \$8.26. 65.2 per cent more is paid for a time saving of 48.5 per cent. (Chart B)

The average time to move a 1st class 100-pound par-

cel of freight from New York to Chicago is 7½ days. To move the same weight parcel by 1st class express between the two cities, 48 hours is allowed for collection, transit and delivery. The percentage of time saved by using the express service instead of the freight service is 73.3 per cent. The cost for the 100-pound 1st class freight parcel is \$1.42 while for the express parcel it is \$3.86, or 167.6 per cent more. The faster service, even at the much higher rate, is demanded by the public today. (Chart C)

Every day an average of three sections of the Twentieth Century Limited on the New York Central Railroad leaves New York for Chicago. This train makes the run in 19 hours. The average time of six other New York Central trains making the same run is 24 hours and 20 minutes. The Twentieth Century saves 21.9 per cent time for its passengers. To compensate for this service the Interstate Commerce Commission allows the operating company to charge a fare of \$42.30 as compared with \$32.70 on the regular trains. This is an increase of 29.3 per cent in the rate. (Chart D)

The past century has brought forth inventions that have changed the mode of living of the entire world. As transportation developed speed, commerce increased, and as commerce increased there came a natural demand for faster and better communication. This demand was met. And it was developed until today we have an intricate system of telegraph and telephone wires all over the world. A person may today send a ten-word message from New York to Chicago for 60 cents, and it will be transmitted and delivered within half an hour. This is the cheapest and fastest telegraph rate that obtains during business hours. For a three-minute station-to-station call \$4.65 is the cheapest telephone rate between the two cities during business hours. By allowing 15 minutes to get the station called by telephone, and allowing an additional 30 minutes for a return message, we have a time saving of 75 per cent. The return telegram costing 60 cents would make a

(Concluded on page 234)



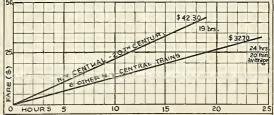


Chart D.—Comparison of fares and time between extra fare trains and regular trains on the N. Y. Central R. R. between New York and Chicago. 29.3% more is paid on the extra fare trains for a saving of 21.9% in time.

### AIR-HOT AND OTHERWISE

HAT'S the best joke in the Washington language? Echo answers: By the people, of the people and for them.

That (as Octavus Roy Cohen's Darktown oracle might say in *The Saturday Evening Post*) is what some branches of our Federal government, as

it is at present operated, are everything else but. They are by Prop. for Ag and of Anda. Hand in hand these little modern gods (or the reverse) to the American Government Departments form the Propaganda team, and that's the biggest thing in Washington.

They are the war-born triplets—busy little deity-brats—offspring of the late unpleasantness with Germany et al. They seem to be the only part of war equipment that was not sold to contractors at a ninety per cent loss, or scrapped at ninety per cent loss plus ten. They are too alive to sell, too vital to be scrapped.

These clever little creatures have not even been demobilized. The departmental forces had found them so useful that they could not do without them.

Personally I think the whole idea of keeping these three in the service is a bad one. But the wise man takes facts as they are, not as he'd like to have them, and Prop, Ag and Anda are emphatically facts.

Therefore, brethren of the air, perhaps it may behoove us, also, to get three little pets of this sort; one may need to stimulate into activity a Prop and Ag and Anda of our own.

"Billy" Mitchell, butchered, makes a Washington holiday because he shunned such doings, telling only truths. But Calvary, Artillery and Infantry, Navy and Marines, old and exceedingly wise, know better, and have made them their little Service deities.

I sometimes almost faint with admiration as I watch the expert trainers of these little dev—I mean gods—put it over on the nation. Great putters are the men who sail the armchairs in the Navy offices. And the civilian "superiors" of the doughboy, saddle-sitter (one has to be polite) and red artillerymen yet may tie them in the great contest for such efficiency.

We of the Air, infants at flim-flamming the public, must take things as they are. Just as the Navy admits the value of some knowledge about navigation and the Army holds that its tactics are all right, so must those of the Air Service, and their friends and sympathizers wake up to the fact that, in these days while flying is to be somewhat considered, the chief armament of all branches of the nation's effective defensive forces must be the typewriter; and the one indispensable member of an American fighting unit as now analyzed by department heads, must be the press agent.

Even though this irks the man in uniform who has to fly the plane and face the shells, bullets, bombs, gas and bayonets when they come, it charms the gallant stay-

Propaganda versus Patriotism.

Pleading with the Army and the Navy to Stop Kicking Their Little Sister in the Face

### By Frank A. Tichenor

at-homes who shoot their mouths instead of guns, who sail upon linoleum seas of office floors, who march up the rugged heights of politics and understand of flights only those of oratory.

Having thus relieved my mind I wish to cite an instance. It will be remembered that the

qualified Army and Navy "experts," generals and admirals alike, proclaimed with loud voice and much gusto before the Congressional and other air investigations the "horrible failure" of the Unified Air Service in Great Britain. Aero Digest, anxious to know the truth, at once looked into this matter and therefore is now enabled to describe that failure in the words of one who knows. This gentleman, indeed, is in position to speak expertly, for he is none other than Mr. Stanley Baldwin, Prime Minister of England. When questioned February 26, 1926, by Mr. Ramsey Macdonald, who used to be Prime Minister, as to whether the present government has any intention of raising afresh, by inquiry or otherwise, the question of the independent status of the Air Force and Air Ministry replied:

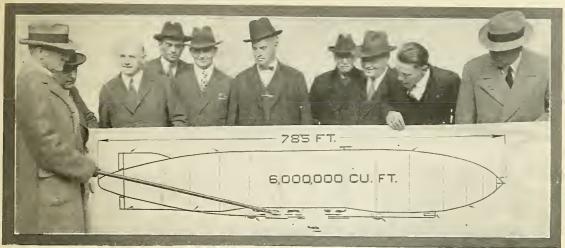
The Prime Minister: "I think it essential to announce that, in accordance with the policy of successive administrations, the Government has no intention of reopening the question of a separate Air Arm and Air Ministry. We intend to pursue the organization of Imperial Defense on the existing basis of three co-equal Services. (Air, Army and Navy). It is in the interests of the fighting services that controversy upon this subject should now cease.

"We are convinced that the way to secure the higher coördination in our Defense machinery, indispensable to full efficiency and, indeed, to economy, lies not in the abolition of any of the three established arms of His Majesty's Forces, but in combined action between all three through the machinery of the Committee of Imperial Defense and the agency of the recently instituted Committee of Chiefs of Staff. We are sure that we can rely upon all concerned to devote themselves loyally and wholeheartedly to this end."

Of course the "Rocking-Chair Brigade" will question the right of a Prime Minister to speak on this all-important subject. He, however, states the facts and only the facts and I will leave it to you, dear reader, to decide as to whether he is telling the truth and only the truth. But the fact is England depends upon three separate fighting forces—Air, Army and Navy.

You can now see that the statements made by our "experts" were false and very good examples of the handiwork of Prop, Ag and Anda.

Is it the bunk? It is. What is it for? To so con-(Continued on page 238)



Rear Admiral Moffett explains to the House Military Affairs Committee the value of an airship carrying five planes. 

 Wide World Photo.

### MILITARY VALUE of AIRSHIPS

HAT are the military possibilities of the rigid airships? Was their spectacular use in the World War merely a flash in the pan? Have new developments in defense against airships and in attack against airships rendered them already of small value? Just what did they accomplish

were they to enemy fire, to the weather? Have there been improvements in construction and handling to meet the new forces that will be brought against them? Are further improvements in prospect? What is the place of the airship in present and future strategy? What can the airship do, if anything, that cannot be as well done, or better done, or more economically, by other units in the national defense?

Any appraisal of the airship in war must take cognizance of such queries as above. America's only justification in continuing its program of large-size lighter-than-air craft must be a reasonably demonstrable conviction that the airship can do certain things in war that are important and necessary to be done, can do them more effectively than existing units, and at equal or lesser cost.

The public generally thinks of the war Zeppelins only in terms of the bombing attacks, but these formed only about ten per cent of the activities and were of minor importance compared to the immense value of the patrol service rendered in connection with the fleet.

However it is generally conceded now by military students that these raids had not only an important retarding effect on British war industries, but held in England for home defense hundreds of thousands of soldiers and thousands of guns which might otherwise have been of decisive weight on the continent.

### By E. A. Lehmann

Former Zeppelin pilot, engineer and executive, second officer to Dr. Eckener on transatlantic flight of the ZR-III and now in America. Due to the unsettled attitude on the value of airships, this article was prepared at the request of Aero Digest.

Most important however is the fact that airships patrolled the whole area of the North Sea and the Baltic Sea during practically every hour of the war, making it almost impossible for the British Navy to make any movement of major importance without being observed and reported, and keeping the German

coasts free from attack or invasion.

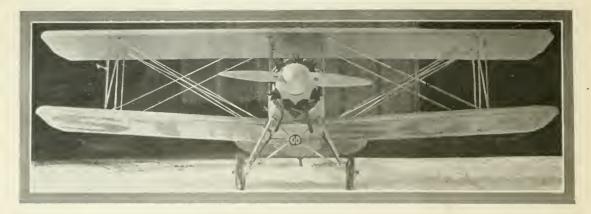
With an average number of twelve to fifteen Zeppelin airships in commission it was possible to have at least two ships simultaneously out on patrol covering certain areas at all times, while on special occasions a larger number of ships was sent out on different radii, forming an effective screen or line of patrol far in advance of the surface vessels.

A large number of airships were lost, but it should be taken into account that they were operated under the most severe conditions of North Sea weather, with only fixed hangars to operate from, and that experience had to be gained only during operations. Only two naval airships were in commission at the beginning of the war, and the reliability and performance of crews as well as of further ships could be developed only gradually and frequently was not up to requirements.

The airships were not fully effective in the battle of Jutland because of poor visibility. The final result might have been very different if this had not been so.

In fact on account of continuous fogs and mists, the advance of the German fleet had been postponed for days by the commander-in-chief, who had the clearest appreciation of the value of the airship patrol, until it could not be deferred any longer lest the secret leak.

Therefore, in the first phase of the battle there was practically no airship assistance. But in the later stage (Continued on page 235)



### "STINSON-DETROITER

ETROIT'S latest entrant in the aircraft manufacturing field is the luxuriously appointed "Stinson-De-

Bν William A. Mara

troiter," the four-passenger, enclosed cabin plane, with a metal skeleton to give it strength, designed by "Eddie" Stinson. The machine has just been put through a series of successful test flights at Packard Field, Detroit, proving beyond doubt the correctness of design.

Stinson is responsible for turning out a vehicle in which people may ride in complete comfort, even in the hard months of winter. The plane incorporates features which Stinson found desirable during his 15 years

flying experience. Stinson has spent more than 11,000 hours in the air, and has probably flown more than any man in the world. He also holds the distinction of having flown more different types of planes than any other pilot.

In designing his plane Stinson had three paramount ideas in mind-to make a plane which would be safe, one that was entirely comfortable and, finally, a machine that would lend it- "Eddie" Stinson, designer-pilot.



self to production. The plane has many unusual features; unusual in that it is the first time that they have all been incorporated in one

airplane. For example the plane is equipped with an electric self-starter, individual brakes on each of the landing wheels, a heated cabin with carpeted floor, an electric cigar lighter, ash receivers and other conveniences. But more important than these conveniences is the safety and ease with which the machine is controlled in the air and maneuvered on the ground.

Stinson demonstrated that it is possible to remove hands and feet from the controls and turn the machine

loose. In making further demonstrations of the inherent stability of the machine, he has placed it in positions dangerous to ships not inherently stable and then removed hands and feet from the controls and throttled the motor. In every case, without assistance from the pilot, the machine would immediately straighten itself out and assume a normal flying position.

The chains on the landing wheels



The "Stinson-Detroiter" is designed to carry five passengers, air mail or freight at 125 miles an hour.

the air.

are a real innovation. Chains have never before been used on airplane wheels. In regard to their use, Stinson said:

"It is possible for us to make a landing with our brakes set and the whicels locked. Because the field is covered with snow there is a tendency for the wheels to slide, but the machine stops in an unusually short distance by application of the brakes. Brakes are an improvement; they permit us to stop the ship within 100 feet. This means the ability to come down in a very short space in the event of a forced landing. Forced landings are dangerous chiefly because a large field is required to land

on. Because of being fitted with brakes

this plane can safely land in almost any type of field."
The brakes on the wheels perform several functions. In starting the old type plane it is necessary for the mechanic to place chock blocks under the wheels and to turn the propeller by hand. In the Stinson machine the mechanic's services are not required. The pilot seats himself in the cabin, presses the starter button, and the electric starter turns the motor, just as an automobile is started. The pilot then sets the brakes on the wheels, which holds the machine in a stationary position until the motor is warmed up. When the pilot is ready to start he merely releases the brakes, and the machine rolls along the ground until it takes off into

The plane is also unusual in that passengers in the cabin may converse with one another and with the pilot while the plane is in flight. Stinson has achieved this result by carrying the exhaust from the motor to a point beneath the plane. In most other planes it is not possible to carry on conversation unless the sign language is used or unless the passengers resort to using a pad and pencil.

The "Stinson-Detroiter" has been built to conform to the latest provisions of the American Aeronautical Safety Code. The machine is of metal construction



Chains used on landing wheels.

throughout with the exception of the spars which are of spruce. Its wing body, stabilizer, vertical fin and rudder are constructed of welded steel tubing. Duralumin ribs are a feature of the wing structure. The whole structure is covered with fabric in order to lessen the cost of production and the cost of replacements.

Stinson has designed his cabin in such a way that the pilot has unusual vision. In making a landing it is possible for the pilot to look directly over the leading edge of the wing and see the wheels on his landing gear.

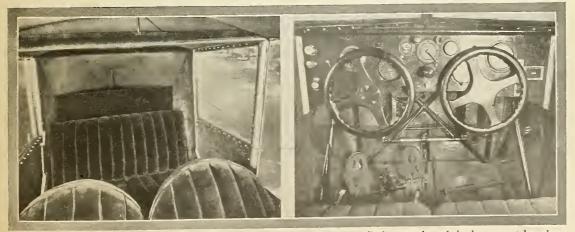
Another feature of particular interest to pilots is the design of the rudder, which is so balanced that it is not nec-

essary for the pilot to keep his feet on the rudder bar in flight. In the Stinson machine the vertical fin is set in line with the propeller blast instead of being set in line with the machine itself, eliminating the tendency of the machine to veer off to one side while in flight.

.The landing gear is of the split axle type, set well forward so that it is possible to land with the brakes locked and the wheels sliding without nosing over.

The "Stinson-Detroiter" is designed for carrying passengers, air mail, light freight, or all three. The normal seating capacity is for four to five persons. If placed in use on an air mail feeder line the plane would carry a pilot, three passengers and 300 pounds of mail or freight.

The specifications are: Span, both wings, 33 ft. 9 in.; length overall, 28 ft.; chord, both wings, 6 ft.; incidence, both wings, 0; dihedral, upper wing, 0; dihedral, lower wing, 4 deg.; wing curve, U.S.A. 35B; total wing area, 350 sq. ft.: weight, empty, 1,700 lbs.; designed to carry 1,200 lbs.; high speed, 125 m.p.h.; cruising speed, 105 m.p.h.; minimum flying speed, 50 m.p.h.; landing speed, 45 m.p.h.; fuel capacity, 76 gal.; oil capacity, 7.5 gal.; cruising range, 500 miles; Curtiss-Reed metal propeller; 200 h.p. Wright "Whirlwind" engine; Bijur electric self-starter.



Interior views of the "Stinson-Detroiter" showing seating arrangement, pilot's controls and the instrument board.

## ATERO DIGEST

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#### QUIZ THE CANDIDATES

N November there are to be elected thirty United States Senators and over two hundred Congressmen. Before you support with your vote the Senator in your state and the Congressman in your district ascertain his position respecting aeronautics, and do it in writing, so that when the next Congress convenes you will know how much support is to be expected from your representatives. Unless you know that those who are asking to be sent to Washington are in favor of fair and comprehensive air legislation that will protect those in this industry, vote against them. And make known to your local papers their attitude, and why it is wrong; then encourage such publicity as will defeat them.

#### KILL 'EM ALL TILL WE GET THE RIGHT ONE

HE action of Congress in voting down all the aircraft bills which were before it is to be commended. A number of these bills were read into the records for the sole purpose of muddying the political waters. None would have been passed, as the debate on these bills proved, after the mud had settled and the waters cleared, that each was a distinctly Democratic bill or a distinctly Republican bill and that none was an aeronautic bill prepared in the interest of the industry and pilots. With the decks cleared a new bill will be presented that will have back of it the experience attained by such Congressmen as served on the Select Investigating Committee. These able gentlemen, after listening for eleven months to expert, sworn testimony. ought to be able to draft a bill that will fill the long felt want, and not one that will act as a garrote to strangle the life from those who have made flying possible.

#### UNIFIED AIR SERVICE A GREAT SUCCESS

S OME of the "expert" Army and Navy delegation who have presented as "testimony" before the various aircraft investigators well-prepared-in-advance propaganda statements against a Unified Air Service, using as the "horrible" example the "failure" of Great Britain's unification, might listen with rapt attention to Sir Sefton Brancker, Air Vice-Marshal and Director of Civil Aviation in England. He has come here to study night flying as it has been made possible under the direction of Major General Mason M. Patrick, Chief of the Army Air Service.

He said when interviewed by the press on his arrival in New York: "It is ridiculous to say that the Unified Air Service has been a failure in England. Naturally it was criticized by the Navy at first as all new things are; but it has been a great success and it will be a greater success. . . .

"The airplane is making the battleship obsolete," he continued. "To-day, unless it is backed by an air service, it is absolutely helpless. There is no denying the fact that it can be quickly sunk from the air."

Of course we assume that our President will at some time find sufficient expert testimony to put in force another economical program founded on a simple process of mathematics; that is, that a \$10,000 airplane can sink in twenty minutes a \$50,000,000 battleship. Consistency, thou art a virtue!

That Sir Sefton Brancker's accuracy of statement is trusted by his countrymen is shown by the increased air appropriations of Great Britain. The amount to be spent by Great Britain this year will total roughly \$80,000,000 as against approximately \$70,000,000 spent in 1925. And it must be remembered that economy so-called is equally as rampant among our English cousins as in the States, and that there it is the result of logical causes—lack of employment and extraordinarily high taxes.

This certainly does not prove a "complete failure," and might bear some study on the part of the high-handed and light-headed gentry in control at present (but not for long) of our national defense.

#### OUR DORMANT N. A. A. HEADQUARTERS

THERE can be no nation without its individual citizens. There can be no association without its individual members. If the head of the national organization, assisted by his more or less able Crown Prince, fails to increase the membership and to cause new chapters to be formed in every city of a thousand or more population, it is due to the lack of ability on the part of these gentlemen to properly visualize the necessity for a chapter in our smallest villages. Or can it be for the reason that by keeping the membership small, control will be easier, and the mantle may be more easily placed upon the shoulders of the Crown Prince at the expiration of the present ruler's reign. Let us hope that such is not the case.

We have contended with the pitiful fact of a dormant national headquarters for over eighteen months, and at a time when dormancy is almost a crime. If ever aeronautics needed a helping hand in Washington, it is at present. We cannot expect from now until next October any more than we have had from last October until now. This help can best be visualized by the amount of help that a raincoat would be to an oyster.

Chapter Presidents, start now; enlarge your membership; select and send delegates to the next National Convention in Philadelphia who will remove these sleeping ornaments, and inject life into the N.A.A. to assist those who are endeavoring against uneven odds to batter down the wall of ignorance and prejudice that has kept aircraft from its rightful position at the head of our national defense.

### THE UNOFFICIAL OBSERVER

Airplanes of the Future

A Bureau of Information

10.000 Curious to Know

N increasing demand for new departures in the design of transport planes is being heard here and abroad. I heard it frequently at the airports of Europe last year. The latest voice here is that of the Daniel Guggenheim

By John Goldstrom

ever; he can always blame a forced landing or a crash on the motor which someone else has built.

Fund for the Promotion of Aeronautics. The Fund wants to do something about it, according to its president, Harry F. Guggenheim, himself a flyer. He says:

"The types of aircraft in use today for industrial aviation are not only in most cases those types produced for war purposes, but in a few cases are the actual craft themselves left over from the war or rebuilt from war material. These types are ill suited for industrial purposes and are merely makeshifts which are all that the struggling industry has been able to afford. Within recent months some new types have appeared, with characteristics approximating some of the desiderata for industrial purposes. However, even these new types have not evolved very far from their wartime progenitors and leave much to be desired for industrial purposes."

Mr. Guggenheim says that the Fund "might encourage the development of industrial types by holding contests for industrial planes, not only offering prizes for the best commercial plane as a whole, but awarding prizes for some specific purpose, device or point in design of importance to commercial aircraft as, for example, a machine to be stable under all aerodynamic conditions."

Mr. Guggenheim indicates that the Fund would be willing to aid in the manufacture of the most promising design, the product to be used in an economic demonstration.

Here is a promising field of endeavor. Design of commercial aircraft has not lagged for any lack of ideas, but for lack of capital to try them out. Rickenbacker in the United States, and Plesman of the Dutch K.L.M. lines, have shown me notebook and tablecloth sketches of multiplanes which I should very much like to see produced and tested. Practical aviators and business executives both of them, they believe that we have about reached the end of the development of present conventional monoplane and biplane types, and that a new phase in design must come shortly.

The future airplane of commerce will have to have a much greater degree of inherent stability than is evident in any type of plane hitherto produced. Even the best and most advanced types of passenger carriers ride much too roughly in stormy weather, even for the hardiest air traveler. Ocean liners have improved greatly in this respect in the last two decades, and undoubtedly there will be found means to make air travel easier.

In commercial design at present there is too much guess work in correlating plane to engine. This state of affairs has its happy uses for the plane builder, howA NOTHER function contemplated by the Guggenheim Fund is a continuing campaign of educational information. It rightly assumes that there is no lack of aeronautical journals;

campaign of educational information. It rightly assumes that there is no lack of aeronautical journals; and Mr. Guggenheim says that "The press covers every aeronautical event of any importance with fair accuracy as far as facts go, but with inadequacy as far as explanations are involved."

He adds: "This Fund, being established only for public benefit, would not run any risk of having its purpose misunderstood if it advised the press and public generally and authoritatively concerning . . . developments, thus making itself a general bureau of information for all studying and writing about this subject."

Such a bureau to be successful would have to know more about newspapers than most aviators know, and more about aviation than most newspaper men know. Explanations of aeronautical developments involve technical considerations frequently difficult to express except in technical terms, but such terminology must be avoided so far as possible in matter acceptable for publication in the daily press. As an aeronautical writer and editor for newspapers since the early days of flying, I rise to testify that this is not the easiest of jobs.

Such a bureau, to be accepted by writers and editors as an authoritative source of information, must carefully avoid even the suspicion of press agentry. I think that the calibre of its directorate assures this avoidance by the Guggenheim Fund. Newspaper editors welcome frank publicity when they are assured that it deals truthfully with facts which they think will interest their readers, but usually they are quick to spot publicity designed merely to advertise the aim of an individual or an organization.

S there really an increasing public interest in aviation?

One interesting answer is to be found in the fact that ten thousand citizens of Cleveland crowded into that city's great Public Hall to hear a speech about it. The fact that the speaker was William Mitchell of course had something to do with the attraction of so large an audience, and the enterprise of *The Cleveland Press* provided free seats;—but what other speaker, on what other subject, could attract such a crowd on a midwinter night in any city in the United States?

Mitchell's best friends will not claim him as a reincarnation of Demosthenes, but he has undoubtedly succeeded in arousing public interest in aviation as no one else has. The result of his efforts will be shown in much more rapid growth.

### IDON-CAPETOWN-LONI

ROM London to the farthermost point of Africa -Capetown, and return, all by air, is the latest achievement of the Ace of British com-

Alan J. Cobham's Extraordinary Flight Paves the Way for Air Service

than in the Northern Sudan. The hottest place on the whole

mercial pilots, Alan J. Cobham. Over 16,000 miles of flying through terrific heat, numerous sandstorms, over deserts, jungles, and swamps, completed with one plane, one engine and no accident. Truly this is a valorous feat! And the practical application of the data obtained will give this land of vast distances and tremendous isolation a long longed-for blessing-a means of rapid communication. The sole object of the flight was to survey the routes for air service between England and her colonies in Africa.

This is the second time this journey has been made by air—the first occasion being when Wing-Commander Sir H. A. Van Ryneveld and Squadron-Leader Sir C. J. O. Brand made the trip in 1920.

With Cobham on this splendid flight were A. B. Elliott, the engineer, and B. W. G. Emmott, who filmed the entire flight. Leaving Croydon airdrome, London, on November 16, in a De Havilland 50-J equipped with a Siddeley "Jaguar" engine, they made slow progress over the 800 miles to Cairo, due to weather conditions which Mr. Cobham claims were the worst encountered on the whole flight, especially between Marseilles and Pisa. Between Brindisi and Athens, also, bumps in rainstorms were most violent. Crossing the Mediterranean (450 miles on compass course), the flyers were out of sight of land for two and a half hours—and they were not in a seaplane!

Mr. Cobham says, "The flying was better in Egypt

trip was Mongalla where the wing fabric was so hot that it burnt our fingers and blistered

our hands if we touched it.

"The second hottest place was over Kimberley where even a thousand feet up the wing was burning hot.

"Immediately upon entering South Africa the country becomes perfect for flying. We could land on the open plains anywhere.

"We photographed the highest port and dry dock in the world, at Kisumu, Victoria Nyanza (3,800 feet above sea level). Our plane took off from Kisumu airdrome with a full load despite the altitude and being almost on the equator.

"When flying low over Victoria Falls, Northern Rhodesia, to secure photographs the heavy spray enveloped and drenched the machine, suddenly choking the engine. Fortunately it quickly picked up again.

"The enthusiasm throughout the trip was enormous. Hundreds of requests were received to visit and circle over villages and towns en route."

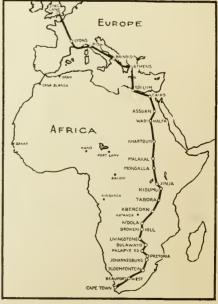
Mr. Cobham reached Capetown on February 17, having made the 8,020 miles in 94 flying hours.

He started on the return dash to England on February 26, and, being free of all work of surveying and reporting, devoted his entire time to making a speed record for flights of this nature.

In nine and one-half days, not counting one day lost at N'dola, owing to tropical rains, the Cape-to-Cairo flight was completed; and on the fifteenth day after leaving Capetown the aviators arrived back at Croydon.



Sir Sefton Brancker bids Alan J. Cobham Godspeed.



Cobham's London-Capetown air route.



### Blazing Trail-

SEVENTEEN YEARS ago the airplane was a toy and a circus day marvel. Today, it is an accepted tool of commerce, of the Mail Service and of passenger transportation. All through these seventeen years of thrilling progress the men of The Glenn L. Martin Co. have

blazed the trail, leading the way to new standards of dependability and safety, contributing unceasingly to the mastery of the air. The purchaser of a Glenn L. Martin airplane is safeguarded by these seventeen years of insistence upon safety and sustained leadership.



### LIGHT AIRPLANES

ROM Texas and California come reports of two planes of widely different types

interesting light mono- George F. McLaughlin tional wood and wire structure.

The fuselage, landing gear, tail group, etc., are of conven-

one of them the cantilever low-wing type and the other of the parasol type with external brace wires.

THE HERFF LIGHT PLANE

The construction of the Herff light plane was made possible by the cocperation of Mr. O. H. Snyder, of McCook Field, Dayton, Ohio, Mr. G. W. Klaus, of Boerne, Texas, and Mr. A. P. Herff, of San Antonio, Texas. This machine was originally equipped with a motorcycle engine, but so fitted it proved unsatisfactory, and was never given a trial flight. An Anzani engine of 30 to 35 h. p. is now used, giving double the original power and resulting in a ship of fine performance. A speed of about 85 miles an hour is attained.



The Anzani-Motored Herff light plane.

Flight tests were conducted at Boerne, which is 1400 feet above sea level and in very rough country. Leaving the ground easily in less than 150 feet, the little plane climbed rapidly to 3400 feet, where its climbing ability did not decrease to a noticeable extent. In spite of strong, gusty winds the ship answered the controls readily. There is no tendency to stall when held in a steep climb; it merely falls off at the nose, resuming a gliding position and repeats the maneuver. One of the interesting features of the ship is its ability to fly with the motor throttled so the propeller becomes visible.

The parasol mounting of the wing gives unobstructed vision to the pilot who can observe the wheels touching the ground in landing. The high wing results in a lowering of the center of gravity, which gives inherent stability to the plane. From the illustration it will be noted that the wing is supported by means of wire trusses and cabanes. This form of structure saves about 60 pounds over that of plywood-covered cantilever wings.

The spars are box girders with plywood sides and spruce caps. The ribs also have plywood webs and spruce caps; the leading edge is plywood covered, the balance fabric. It is in two sections, joined in the middle and mounted to the two steel tube pyramids. There are two gasoline tanks with a total capacity of 41/2 gallons, comprising the leading edge of the center of the wing, and supplying gas to the engine by gravity.

The removal of two bolts allows the engine and mount to be swung about as on a hinge on the other two bolts, thus making the magneto accessible for adjustments. A one-gallon tank for castor oil is mounted under the front part of the cowling of the fuselage.

Some of the specifications of the ship are as follows: Length over all, 16 ft. 9 in.; wing section, Gottengen No. 387; wing span, 27 feet; wing chord, 4 ft. 4 in.: areas (in sq. ft.) wing, 117; ailerons, 17.5; stabilizer, 9.8; elevators, 12.25; fin. 1.6; rudder, 5.4.

Weight empty, 350 pounds; weight loaded, 570 pounds; power loading, 16.3 pounds per h. p.; wing loading, 4.87 pounds per square foot of wing area.

#### THE BREA "HUMMING BIRD"

Under the auspices of the Brea Air Club of Brea, California, the "Humming Bird" was exhibited for the first time on the lawn of the Elks Club, Anaheim. This plane is the work of Messrs. William Tremaine and Albert Thaheld of Brea. It was built in two months and flight-tested at the Long Beach Municipal Airport by Pilot Roy Freeman.

Mr. Thaheld, a young Austrian who has been in this country only seven months, has applied his knowledge of glider construction in the Humming Bird design.

The relatively large wheels assist in making easy landings. The clean, streamlined outline of the ship assist the speed considerably. With the 24 h. p. aircooled 4-cylinder vertical engine with which it was first equipped, a high speed of 100 miles an hour was reached. An Anzani engine has since been installed with improved results. The machine can be slowed



The 24 h.p. Brea "Humming Bird" light plane.

down to 28 miles an hour, which is remarkable considering the small wing spread,—only 21 feet. The length

The wing and body structure is formed of steel tube. Without pilot and fuel, the weight of the machine is about 250 pounds. Fuel can be carried for a flight of over 600 miles.



# Lionoil PROTECTS FOKKER PLANES in Polar Flight

LL metal parts of the two big, triple-motored monoplanes being used for the Detroit-sponsored polar expedition of the American Geographical Society, are finished with Berry Brothers' Lionoil—the greatest rust preventive known to science.

In France it is freely admitted that the continued use of duralumin in aircraft construction is only practical because of the perfect protection afforded by this remarkable product which prevents metallic corrosion and waterproofs both wood and Haskelite.



For full particulars address: Marine & Aviation Department

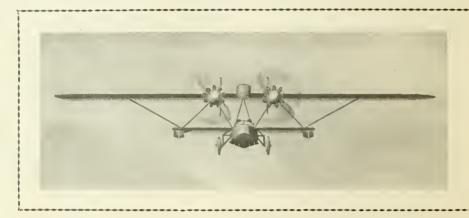
arnishes Enamels Stains Walkerville, Ont. Detroit, Mich.

Member Aeronautical Chamber of Commerce

# Aircraft Corporation of America Annou

THE FOUR-PLACE "AIRCO" AMPHIBIAN.

Manufactured by the Sikorsky Mfg. Corp.



### SPECIFICATIONS AND PERFORMANCES (Performances given are with full load of 1000 pounds.)

Span 48 ft.	Load per
Length overall 28 ft.	Load per
Height on wheels 9 ft.	Load fac
Area of plane 372 ft.	High spe
Weight empty2300 ft.	Landing
Normal useful load1000 lbs.	Climb at
(Pilot, 3 passengers, 4 hours' fuel)	Ceiling
Power	Gliding a
(2 air-cooled engines, 120 h.p. each)	Cruising

Load per square foot ... 8.87 lbs.
Load per h. p. ... 13.75 lbs.
Load factor ... 5. lbs.
High speed ... 100 m. p. h.
Landing speed ... below 40 m. p. h.
Climb at ground ... 600 ft. per min.
Ceiling ... 10,000 feet
Gliding angle ... one to nine
Cruising speed on 1 motor 70 m.p.h.

Equipped with an extremely simple and efficient retractable landing gear.

The "AIRCO" AMPHIBIAN has been especially designed by Mr. Igor Sikorsky, after careful consideration of the results of over two years of intensive developments in actual flying tests of this type by Lieutenant George R. Pond, U.S.N.R., Vice-President, who is also in charge of the supervision of the manufacture and tests of all "AIRCO" Amphibians.

IMPORTANT: Purchasers are supplied with indemnity bonds, issued by

EARLY DELIVERIES

CATALOGUE ON

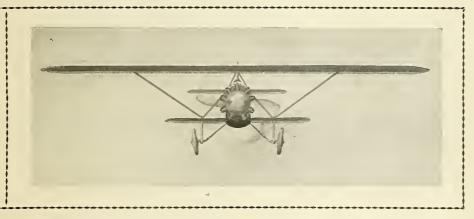
### AIRCRAFT CORPORATION OF AMERICA

109 West 57th Street, New York City

Telephones: Circle 6406 and 8309

### nces—

### THE SUPER-SPORT SIKORSKY MESSENGER. Equipped with 120 h.p. Super-Rhone Engine.



### SPECIFICATIONS AND PERFORMANCES (Performances given are with full load of 550 pounds.)

Span 32 ft.	Load per sq. ft 8.5 lbs.
Overall length 18 ft.	Load per h. p 12.9 lbs.
Height 7 ft.	Load factor 8.5 lbs.
Area of plane182 sq. ft.	High speed130 m. p. h.
Weight empty	Landing speedbelow 40 m. p. h.
Normal useful load550 lbs.	Climb at ground 1000 ft. per min.
(Pilot, 1 passenger, 3 hours' fuel.)	Ceiling17,000 feet
Power (air-cooled engine) 120 h. p.	Gliding angleone to thirteen

Price \$4,300 f. o. b. Long Island factory

responsible company, guaranteeing performance and delivery of ships

**IPPLICATION** — DEALERS' TERRITORY OPEN

# THE YARNS OF "HELL'S BELLS" O'NEIL

SO," says Hell's Bells, "just as if we didn't have enough trouble,

That Thing They Call an Adjutant

they go and send us a blinking Adjutant! Nobody seemed to By James Warner Bellah

Adjutant! Nobody seemed to By James V know what we did with our last one and nobody cared much about it. But bright and

early one morning along comes the replacement in shiny boots and beautiful brass buttons and all sorts of signs on his collar and hat to the effect that he's a soldier in some man's army.

"I met him first. I'm in the Skipper's office, that's sort of a packing case tacked onto a hangar, and I'm sort of poking around looking for the snubbed butts we used to keep in a can on the window ledge. 'Look here, my man,' pipes this Adjutant bloke. 'Outside. This is for officers only. Knock if you wish to enter!'

"Well, of course, on that morning I had to go and forget to bring my lorgnette. I sort of stared at him with the naked eye, 'What am I?' I asks sort of mildly like.

"'Nothing that I've ever seen before,' he says. 'Hop it now, my man, and spruce up a bit on dress or I shall be forced to tick you off to the Sergeant Major. Are those overalls that you are wearing or an issue blanket?'

"'I'll overall you, you haemoglobinized wart,' I offer. 'These are my best britches and I'm skipper of B Flight.'

"'Sorry,' he says, not the least flustered. 'I'm Adjutant. Example to the men, you know. Things need sprucing up about here, you know. This is my office as it were. I'll thank you

to knock and salute when entering and to pass the word along. Good morning.' And like a ninny I find myself outside with a bunch of words on their way but only a closed door to listen to 'em.

to listen to 'em.

"About that time my litter of second lieutenants begin to howl around my ankles.

They were a good bunch, those lads. Only way you could tell they were second lieutenants was because they were only about sixteen years old. They'd lost their Sam Brownes and white britches

vears before. 'Who

is this Guy?' they

yelp. 'Is this a war or a fancy dress ball? Are we paid to fly or are we in some army?' One of 'em had been ticked off for going around the hangars in the same pajamas and flying boots

he'd done his daylight patrol in. Another one had caught it for wearing bedroom slippers in the mess. Another for having no seat to his pants.

"Well, I told 'em. I'd see the Major, and I did. The Major is tight which is unusual, it not being ten a, m. yet. 'Al,' I says, 'who's this accident in the brass buttons?'

"'Wha'stoyou? Ifmazurcan'thavenadjudent wha's syoozbein' mazur? Besides can'tellwhena Joogadoor Brenralliableshowup. Gethellont lemmesleep.'

"Well to make a long story short, the Major sleeps for three days and then gets tight again and by that time my cubs start cleaning their gats. The Adjutant was making them shave and dress like they were the crew of the King's Yacht expecting a state visit from the Twelve Disciples. Also he was drilling the mechanics and telling the mess sergeant to serve plates from the left side. Also, nobody could fly in pajamas or sleep in underclothes and whatnot. Right away I see the squadron is on the rocks and I was just wondering where to lock this Adjutant up so we could do some flying, when I'm five minutes too late.

"My cub pilots had talked it all over the day before and decided on murder. They talk the Adjutant out

of his office, across the tarmac and down to one of the buses. While I watch with my blind eye, they work him easily into the back seat and strap in his monocle.

They shake hands with him,

hand him his stick and gloves, blow him a kiss and 'Red' Moriarity takes-off with him.

Then they sort of

turn away and go back to get comfortable again.

"Off and on for three hours I see 'R e d' flying around. I say flying—that's a little off. First he does fourteen loops and (Continued on

page 238)



"They woke up the medico, and got a stretcher ready, and there they are, standing on the tarmac in pajamas and bathrobes."





The salon is fitted with luxurious leather-upholstered seats, and the walls are lined with leather in contrasting finish and tone.

## Leather in the AIR

THE John Wanamaker, one of the finest passenger-carrying planes—made by the Stout Metal Airplane Co.—is upholstered throughout with the best leather.

This selection was dictated by considerations of the best in comfort, wear and appearance.

Nothing takes the place of

### LEATHER

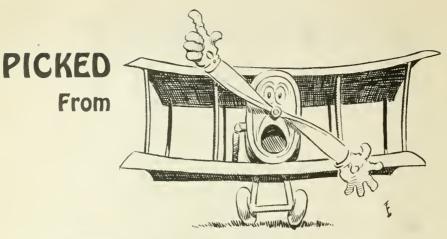
AMERICAN LEATHER PRODUCERS, INC Room 263, One Madison Ave., New York, N. Y







Say you saw it in AERO DIGEST



The

AIR

AERO DIGEST will award a prize of \$5 each month for the best joke published. Only jokes pertaining to the aircraft field will be considered. Address the "Picked From The Air" Department, Aero Digest, 220 West 42nd Street, New York, N. Y.

Mr. Chalmer K. Stewart, Akron, Ohio, won the prize for April with the following:

An aviator named Angus McPenny Went up in an old-fashioned Jenny He crashed to the ground With a terrible sound Wrap't up in his neighbors' antenny.

"Gosh," mused the aviator, "I haven't got enough balsa wood to finish this streamlining, what'll I do?"

"Use your head, bo, use your head," urged a bystander.

"Beef going up," exclaimed the pilot, as he took the 300 lb, lady for a hop.

"Health in every drop," may be a good milk ad, but as an aero ad——"

Mary had a little Jenny She took it for a ride She spun the thing 2,000 feet And then she up and died.

Tiny drops of water Tiny grains of sand Make a muddy flying field A heck of a place to land.

Not all high flyers are aviators.

"It's a hard life," said the aviator, as he crashed into a stone quarry.

"It's a dirty trick," said the pilot, as he landed upside-down on the mud-flats. "It's a fast life," sighed the pursuit pilot, as he took a steep dive.

The Eagle Model Aero Club actually has "Good to the last drop" as its motto.

"Every little movement has a meaning all its own," sang the aviator, as his Jenny hit an air-pocket.

"Aviation has its fine points," said the pilot, as he crashed into a field of cactus.

-Chalmers K. Stewart.

Farmer: 'Smatter boy, did she fall with ye?

Pilot: "Oh my flippers jammed and when I cut the gun she pancaked. Just pull that longeron off my leg, will ya Buddy?"

Farmer: "Back, Rubin, the dum fools crazern a bat."

—B. T. Hammend.

#### Absent-minded

Visitor at hospital: "My dear man, what happened to

Parachute Jumper: "Well, lady, I was up in a plane thinking of my sweetheart when I jumped out."

Visitor: "Well."

Jumper: "I forgot my parachute."

Sen Zinberg.

#### Want ad in the Los Angeles Times:

Wanted—Man to build motor for new airplane that will raise straight up from the ground. Must be able to finance self and must be true believer in God. Call Gus Raschke, 480 Crabe Blvd., L. A.

-The American Mercury.

#### Economy

Ole Olson had been working as a mechanic at an air mail field, and his boss, a thrifty man, had been coaching him for promotion to pilot with such advice as: "Now, Ole, don't waste a drop of oil—that co-ts money. And don't waste the waste either—that's expensive too."

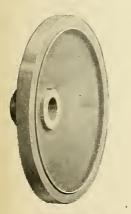
When Ole went up to be questioned on his eligibility for a pilot's license he was asked: "Suppose you are on your plane and it suddenly catches fire, what would you do?"

To which Ole replied: "I grab the oil can; I grab the waste, and I yump."

-Arkansas Utility News.

# BOHNALITE PERMANENT MOLD CASTINGS





### 60% Saving in Weight

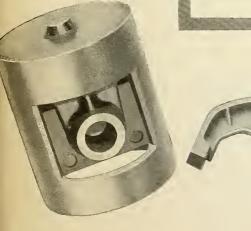
Wherever BOHNALITE castings are substituted for cast iron, malleable iron or steel, the weight is reduced 60%—a casting weighing a hundred pounds in cast iron would weigh only forty pounds in BOHNALITE.

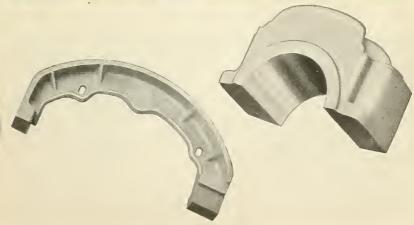
The high tensile strength, elongation, ductility, hardness on wearing surfaces, along with the low specific gravity of BOHNALITE recommend the use of these improved aluminum alloys, instead of cast iron—and in many cases they replace malleable iron and steel. Because of their exceptional physical properties BOHNALITE alloys make advisable the use of aluminum alloys where formerly it was considered to be impractical.

Maximum physical properties of BOHNALITE are obtained when castings are made in permanent molds.

BOHN PRODUCTS include Ring True Bearings, BOHNALITE CASTINGS, (both permanent mold and sand) and NELSON BOHNALITE Pistons.

BOHN ALUMINUM & BRASS CORPORATION
FAST GRAND BOULEVARD, DETROIT





### WESTERN NEWS

#### PARKRIDGE FIELD

A GOLF enthusiast can now fly to his favorite links, play 18 holes and still get back in time to keep peace in the family. Parkridge country club has made this possible.

This club, which is nestled in the hills near Corona, California, has put an aviation field at its very doors. It claims the distinction of being the only club in California at which a member may alight, take his golf bags from the fuselage and tee off all in ten minutes' time,

Parkridge field was dedicated last Thanksgiving day, and it has already become very popular with Southern California flyers. It forms a convenient and much needed link in the chain of landing fields between Los Angeles and San Diego. It also has been highly praised for its lack of obstruction in landing and taking off. The field is large enough to take care of 15 passenger planes simultaneously and steps have been taken toward making it a class A government field. The field is perfectly level, 91 acres in size, and is marked with a landing T and wind-sock.

Parkridge field was given a gala christening at the opening of the club by the Black Falcons of Clover Field, Santa Monica. Their home "nest," it will be remembered, was the starting point of the famous round-the-world aerial trip.

The Black Falcons are one of the four squadrons of the pursuit group stationed at Clover Field. They are kept at highest efficiency and are ready for military duty upon a few hours' notice. The entire personnel of the organization are members of the Parkridge club, and hop over there frequently for golf, shooting on the rifle range and to enjoy other divertissements that the club offers.

Many aerial meets, air circuses and trophy flights are being planned by the Black Falcons and the various aero clubs in the district and on the Pacific Coast at large, all to be held at the new Parkridge field.

The club recently held a Flyers' Ball at which nearly every person present came by way of airplane, some coming several hundred niles.

What will the wives of the next generation do to keep their husbands from playing golf some 500 miles away on Sunday morning?

#### SANTA ANA AIR CLUB

N February 24th, Santa Ana organized one of the many air clubs which are rapidly being formed all over Southern California. The organization meeting was held at St. Ann's Inn, Santa Ana, and was attended by some of the leading business men of the city, and a number of well known and popular members of air clubs of other cities.

Judge F. C. Drumm of Santa Ana was toastmaster during the dinner and presided until after the election of officers.

Joe Skidmore, who did most of the preliminary work of the organization, brought out the fact that for the club to be a success it must depend to a great extent on the non-flyers in the city. He also laid stress on the fact that Santa Ana was the home and experimental headquarters of Glenn Martin, and that with the realization of his success before them the citizens should he'p the new club to become a worthy representative of Martin's home town.

Commodore Frank Mason told of the starting of the Brea Air Club, and the prominent place the club now occupies in the affairs of the city.

Eddie Martin, owner of the Santa Ana airdrome and one of the coast's best flyers, spoke on the publicity advantages of an air club to a city.

Tom Carlyon of Long Beach gave a comedy description of his first parachute jump,

which caused lots of laughter and applause. Commodore Will N. Fox of the Long Beach Air Club, who devotes most of his time to aiding the organization of new air clubs and to increasing the membership of bis own and other air clubs, spoke on aviation from a business standpoint Showing the future business possibilities of aviation for the city he cited the Douglas Company with its one-half million dollar pay roll, most of which is being spent in Santa Monica, and a number of other cases. He stressed the desirability of every city securing ground for a municipal airport, and quoted the price lately contracted for Clover Field as \$800,000 whereas five years ago it could bave been bought for \$200,000. "Get business men into your club," was his advice.

F. E. Samuels, in behalf of the Aero Di-GEST, offered the cooperation of the magazine, and of himself wherever and whenever called upon.

B. E. Northland, of Santa Ana and Anaheim, pointed out the safety of modern aviation. "The public only requires to be educated to the safety of flying when it will become as popular as motoring," he said.

The following officers were elected: commodore, B. E. Northland; vice-commodore, Joe Skidmore; secretary and treasurer, Miss B. L. Stevens; rear commodore, Johnny Martin.

### PROFESSIONAL PILOTS DISCUSS LEGISLATION

THE Professional Pilots' Association held an open meeting on March 9 to discuss aircraft legislation, taking up the proposed ordinance now under consideration by the Los Angeles Council, as well as the Bingham bill. W. D. Waterman of the Ontario Airport presided.

The Bingbam bill was endorsed by the association, with a recommendation that "All appointments under this bill be first ratified before becoming effective by majority vote of a national association of pilots, owners and operators of aircraft; such a vote to be taken in the district in which said appointee is to serve, and that his removal can be caused at any time by ninety days' notice upon the three-quarters vote of said organization in the district in which he serves."

G. L. Budwig then read the ordinance now under consideration by the Los Angeles Council, which caused considerable comment among the members, but it was finally agreed that the ordinance was fair to the pilots as well as the public if it can be kept from becoming a political issue.

Dr. T. C. Young, President of the Western Aero League, was the speaker of the evening, and gave a very interesting talk on



An air view of the flying field at the Parkridge Country Club.

### Announcing—



### THE RYAN M-1

A distinct contribution to the aeronautical world—designed and built by the same company whose sound and stable policies assured the success of the Los Angeles - San Diego Airline

"The plane that pays a profit."

### RYAN AIRLINES INC.

General Office and Factory 3200 Barnett Avenue,

San Diego, California.

the work being done by the league. He told of the big two-day meeting of the California Development Association which is to take place in Los Angeles on March 30 and April 1, at which time representatives of the Chambers of Commerce of most of the cities of California and nearby states will be present to further the interests of aviation by legislation, landing fields, and other methods.

Meetings of this kind are doing a great deal to increase interest in and help aeronautics, bringing together not only the pilots but members of the different air clubs, associations, owners of airports, manufacturers' representatives and the general public.

### ELKS ARE AIR FANS

S HOWING their appreciation for the benefits already derived from the publicity that Northern Orange County has received through the efforts of the Brea Air Club since its inauguration, and realizing the future possibilities of publicity for the County, the Brea Air Club was requested to hold a special meeting at the Elks club house, Anaheim, California, on February 25, to explain how Anaheim can be of assistance to the Brea Air Club in the good work already started.

Besides the Brea club members, large delegations from the Long Beach Air Club and the newly formed Santa Ana Air Club, officers and members of the Anaheim Lodge of Elks, and a number of the leading citizens of Anaheim, including members of the Chamber of Commerce, attended the dinner and meeting.

These dinners before the meetings are proving to be a good custom, as those present become acquainted and a feeling of good will prevails and continues throughout the

Earl Daugherty from Long Beach, who has just passed his examination and been appointed Lieutenant of the Naval Reserve of San Diego, laved great stress on the necessity of more flying fields throughout the west, and gave some of his experiences as a flyer. He has recently moved his flying activities from his own to the Municipal Field at Long Beach.

Ted Craig from Brea, who is a member of the Anaheim Lodge of Elks told of the benefits, particularly from an advertising standpoint, that Brea derived from the last

Bill Fox, Commodore of the Long Beach Air Club, said: "There is a place for every young man, who cares to enter the business of aviation, either in the manufacturing or the commercial branch of the business." He also said that Anaheim as well as other cities must eventually have their own airport, and that now is the time to secure the ground for one, before the price of property becomes exorbitant. He advised the forming of air clubs for the results that can be obtained by cooperation.

Charles Meyer of the Rickenbacker Motor Company, who is a member of the Lodge. told how he keeps up with the latest in aviation by reading as many aeronautical magazines as he can secure from the front to the back cover, and digesting same. He urged every one in Orange County to assist the

Brea Air Club in their efforts to bring aviation to the height of perfection.

Short talks followed by J. D. Montijo of Long Beach; William Tremaine and Albert Thaheld of Brea, who designed and built the tiny monoplane on exhibition in front of the Elks club house; Al Ebright of Long Beach, who told of his summer airline from Little Lake into Menatchie Meadows (8,000 feet up in the Sierra's) which makes the trip in twenty minutes that formerly took nine hours by pack horse, and thereby making a hunting and fishing retreat accessible: B. E. Northland, the newly elected Commodore of the Santa Ana Air Club; F. E. Samuels, Aero Digest representative; Bill Palmer of the Brea Air Club and Don Smith of the Long Beach Air Club.

Commodore Frank Mason, Brea Air Club, announced that the Elks of Southern California were sponsoring an air meet at the Brea Airport on April 24. Cups and cash prizes will be given to the winners of the events. There will also be an extensive ground exhibition of motors, ships and accessories. A large crowd is expected-over twenty thousand attended the October meet.

#### A NEW AIRPORT

A NOTHER flying field was added to the list of Los Angeles suburban airports on March 7. This field, situated on Ventura Boulevard at Receda Avenue, known as the Van Nuvs Airport, is under the management of two prominent flyers, Lieut. R. R. Benton and Capt. C. A. Mackenzie, who will teach aviation and carry passengers.

### A Wonderful Parachute Drop

THE HARDIN PARACHUTE makes a wonderful drop every time-wonderful in its operation-wonderful in its riding qualities-and now a wonderful drop in price.

You need a parachute this season—why not take advantage of our special offer and save money for yourself?

The Hardin Parachute has an established reputation for reliability throughout the country, and you will always be safe when you use a Hardin Parachute.

### Hardin Parachute Co.

Minneapolis, Minn.

Clip and Mail coupon below

Hardin Parachute Co., Minneapolis, Minn. Please mail literature, price list and special offer or Hardin Parachutes.	1
Name	
Street No.	
CityState	

K.W. Montee Aircraft Co.

Clover Field
Santa Monica, Cal.

SPECIALIZING IN

AERIAL SURVEY
and
OBLIQUE PHOTOGRAPHY

Custom Built Aircraft



#### THE OX5 TRAVEL AIR

For general utility purposes requiring high grade performance, ease of control, quality, and service.

Performance with 600 pounds of useful load:

High speed. . . . 100 m.p.h. Landing speed. . . 38 m.p.h. Service ceiling. . . . 10,000 feet

Price, \$3,500 fly-away Wichita.

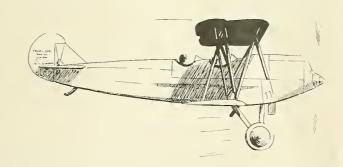
### TRAVEL AIR AIRCRAFT 3-PLACE SERIES

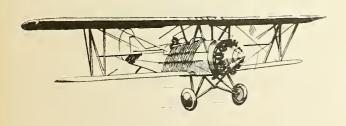
#### THE C6 TRAVEL AIR

For photographic and extensive cross-country work.

Performance with 600 pounds of useful load:

Price, \$7,150 fly-away Wichita.





THIS MODEL ALSO SUPPLIED WITH 180 h.p. HISPANO MOTOR.

### THE WHIRLWIND TRAVEL AIR

For high class service demanding a reserve of power, mail lines, dusting, emergency transport, etc.

Performance with 600 pounds of useful load:

High speed128 m.p.h.Low speed38 m.p.h.Ceiling20,000 feetClimb to 1,300 ft.1 minuteClimb to 10,000 ft.12 minutes

Price, \$9,500 fly-away Wichita.

We solicit custom-made airplanes.



Let us know your special requirements.

### CHANGING IN MID-AIR

L ADIES now not only change their minds but change their planes in mid-air. In the illustration we see Gladys Ingle stepping from her plane to the lower wing of Art Goebel's Jenny-3,000 feet in the air!

Of this we are certain-she had no time to change her mind during this stage of the

Miss Ingle and Art Goebel are famous throughout the West Coast for their thrilling aerial work performed for the motion picture companies. They are members of the Black Cat Squadron.

### AL JOHNSON STUNTS WITH GREAT CARE

By FRANK E. SAMUELS

JUST after Al Johnson, the stunt flyer for the movies, landed after performing an extra hazardous stunt for one of the motion pieture eompanies, and while he was waiting to find out if he would have to do it over again for the aerial photographer, I took advantage of his resting time to ask him a few questions as to whether he was ever nervous when performing new stunts. Al, in his own inimitable way, replied: "Well, you see, I have been doubling for movie actors ever since I was big enough to ride a motoreyele, and have done almost every known ground stant for them. I can't say that I was ever nervous. I generally have



Gladys Ingle changes to Art Goebel's plane-3,000 feet up in the air.

it all figured out as to how I am going to do the trick, and am usually very careful to see that everything is prepared in advance to assure me the minimum danger. Carelessness of detail is the cause of most accidents.

"While preparing to make a parachute jump recently I was in such haste that I did not properly fasten my rip-eord. We took off, Bon Macdougall flying the ship. When we reached an altitude of 1,500 feet Bon signalled me out of the eockpit. I went out on the wing, and as we were eireling for position my rip-eord came loose and blew back over my shoulder. I was sitting on the edge of the wing at the time. The pilot immediately noticed it and pointed to it. I thought that he was motioning for me to look down which I did, and noticed a ship looping close to the ground, and thought that Bon was watching it too. When I looked at the pilot again he motioned to me frantically, pointing to my pack. Again I looked down toward earth. I didn't see anything, so leaned away out in order to get a good view under the wing. As I did so my rip-eord became entangled around an ineidence wire, pulled and opened my pack. Bon immediately signalled me to come to the cockpit, but just as I gained my feet the paraehute flew through the wires and opened, dragging me through with it before I had a chance to think. The force of the 'chute pulled me through the wires, broke parts of my harness and strained my back. The jar on the ship was terrifie. It tore the streamline of the wires and threw the whole ship out of line. The last thing that I remembered was the look on the pilot's face as I shot by him.

"When I landed at last I was partially conseious, but was O. K. a few minutes later, minus about eight square inches of good tough hide. Then was when Bon Macdougall got his revenge for a busted ship, as he took great pleasure in acting as my doctor, using an entire pint of iodine on my raw flesh at one painting. I have a full quart of iodine that I am saving in case 1 ever have the chance to return the compli-

### YACKEY'S ANNUAL SPRING SALE

Two-place OX5 dual control Yackey Sport, only used 10 hours. Guarantee motor and plane to he in excellent condition. Sale price \$1350, delivered any place for 10c, per mile.

One rebuilt OXX6 Canuck, dual control, fuselage just rebuilt and recovered, guaranteed to be in excellent condition, fine looking and flying ship at \$1650.

One rebuilt OXX6 Cannek, dual control, three-place, reconditioned throughout, guaranteed to be in excellent condition, a very good buy at \$1150.

Single-place OX5 Yackey Sport, 38-gallon gas capacity, complete, easy to fly, with overhauled OX5 motor \$1075, without motor \$875.

One Lincoln Standard Tourabout, 3-place, 180 Hisso motor, has had only 6 hours since overhaul, new Hamilton propeller, new cartridge corradiator, 50-gallon gas tank, fine shape, \$1500.

OX5 motors, just rebuilt in our shops, guaranteed in excellent condition, will demonstrate on test stand before shipping, only few left, \$225.

Liberty 6 Hall Scotts, parts interchangeable with Liberty 12 parts. Excellent type motor, 220 h.p., weight only 530 lbs. Low gas and oil consumption. These motors excellent condition, just test run, only four left; big bargain at \$550 each.

Lot of Hisso parts. Will send list price, \$450, well worth \$700.

four 12-cylinder Renault Motors 300 h.p., with many extra parts, \$875.

Canuck wing covers, lowers only, real Irish lineu, \$15.

Irish linen, Grade AA, 36" wide, 90c. per yd. Nitrate dope, new stock, 5 gallon cans, \$10.

Nitrate dope, new stock, 5 gallon cans, \$10.

Thiead; tape; varnish; enamels; lacquers \*- all colors; safety wire; fibre-lined gas hose (all sizes), 60c. per foot; new shock cord, 20c. per foot; windshield stock, \$2 per lb.; new OX5 rings, 50c.; new OX5 valves, 50c.; hose clamps, 10c. each. All kinds of new stock for building, overhaul and repair work. Goggles, new type, \$4.50 each. Special belmets, \$5. Helmets in dozen lots, \$4.50 each. 12-foot distance type thermometers, radiated, new, original box, \$8.50. New stock 62 x 4 casings, \$11.40, new tuhes, \$2.75. TM fuselage converted to two place OX5 less motor and cowers, \$225. TM fuselage converted to two place OX5 less motor and cowers, \$225. Esteel tubing motor mounting for OX5 in TM, \$75. Nose spinner for OX5, TM, \$15. Lower TM wings, new government covers, \$15, crated \$20. TM landing gear vees, new, each \$10. 26 x 4 wheels for JN4, Canuck OX, TM, \$5 each. DH landing gear vees, wood, \$7.50 per pair.

Three brand new OX5 Jennies as received from the Air Mail. \$900

Three brand new OX5 Jennies as received from the Air Mail. \$900 each. These ships are complete in every detail and have new Hammonsport Curtiss OX5 motors installed.

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### I m m e d i a t e delivery!

The new five passenger Type LS5 Lincoln Standard airplane can be delivered on Lincoln Field, ship - tested and ready to fly away 24 hours after receipt of your order.

PRICE \$2875 f.o.b. LINCOLN

LINCOLN STANDARD AIRCRAFT Co. LINCOLN, NEBRASKA

THERE are thirteen different types of Sikorsky aircraft covering every requirement of modern commercial aviation.

Behind every Sikorsky airplane is the experience of seventeen years of building successful aircraft.

Sikorsky airplanes combine high performance with safety, ease of operation and reliability.

### SIKORSKY MANUFACTURING CORP.,

250 West 57th St., New York City. Roosevelt Field, L. I.



Some planes in service at the Dycer Airport, Los Angeles.

#### DYCER AIRPORT

THE Dycer Airport, located at 136th Street and Western Avenue, Los Angeles, has been operated for commercial flying for two and a half years. It is ideally situated in the center of a square mile of open level ground, and has one-half mile runways in four directions.

Charles F. Dycer is the proprietor; A. S. Patterson, formerly with the Royal Flying Corps, the manager; and John S. Huber,

#### WESTERN AIR EXPRESS

NAUGURATION of daily air mail service directly to and from Los Angeles is certain to begin in April, according to Harris M. Hanshue, president of Western Air Express, Inc., holder of the air mail contract between Los Angeles and Salt Lake City. This will bring Southern California within twenty-two hours of Chicago and within thirty hours of New York by air mail.

Western Air Express, Inc., will fly Douglas mail planes identical in type to the twenty-five Douglas ships ordered recently by the Post Office Department for replacement on the Federal air mail system.

This great commercial air mail line of the west was promoted and organized by men long identified with automotive transportation. Harris M. Hanshue, who left the gridiron at Michigan to become one of the greatest of automobile racing drivers early in the inception of that industry, is president. Mr. Hanshue's mind has long turned to the possibilities of aviation. When the world war called, he was past the age for acceptance, but he personally recruited more than 100 aviators and aviation mechanics for the Army Air Service.

Major C. C. Moseley, Pulitzer speed prize winner of 1920, is vice-president in charge of air operations for the company.

This route from Los Angeles to Salt Lake City (660 miles), traversing some of America's most renowned seen'c sections, will be flown in daylight

#### ELKO-PASCO ROUTE

WALTER T. VARNEY will commence operation of his air mail service on April 6, from Elko, Nevada, via Boise, Idaho to Pasco, Washington and return. With the installation of this route mail from the East will reach the extreme Western section of the United States in approximately 30 hours. It is so located as to furnish expeditious mail service by means of the transcontinental government-operated route for the cities of California and those of the Northwest.

#### LYLE-HOYT ACTIVE

THE Lyle-Hoyt Aircraft Corp. has erected a new five-place hangar at Clover Field where they are operating a C6A Travel Air, an OX5 Travel Air and a Jenny. In addition to their regular flying activities of passenger carrying, crosscountry trips and instruction, they are the West Coast distributors for the Travel Air planes.

At the present time F. D. Hoyt and Ted Peters have two Travel Air's on a demonstration tour of the eoast, and reports from them indicate that the far West is not blind to the advantages of aeronautics.

We believe the prices on airplanes are now at their lowest. A small deposit on any of our airplanes will hold same for spring delivery. We expect a sharp advance in prices very soon.

We still have plenty of Standards, Jennies, Canucks, Orioles, D. H.'s with Liberty motors, Spads less motors, T. M. Scouts with and without motors. A large number of these airplanes are set up, test-flown and ready for immediate fly-away delivery.

Come and take your pick.

Come and take your pick.

New Standard J-1
Airplanes

These airplanes come complete with tools and instruments and the front seat is built so as to accommodate two passengers. These where needed.

No bond required and no charge for breakage

Room and board near field at \$10 per week

INCLUDING SOLO

#### EIGHT YEARS WITHOUT AN ACCIDENT 76 Students Graduated in 1925 ---

We guarantee to solo our students regardless of the number of flying hours required. We also furnish planes at very reasonable rates for those who wisb to qualify for the F. A. I. pilot's certificate and we maintain an employment agency for our graduate pilots.

The flying school of the Robertson Aircraft Corporation is one of the oldest and best known in the United States. Our instructors are ex-army aviators and are mail pilots with wide experience. Our training equipment is the best obtainable. In over eight years of operation our students have never damaged a sbip in their solo flights.

The flying field is approximately six miles from St. Louis, and is easily accessible by railroad, street car and hard-surfaced roads. It is the largest and best privately owned field in the country. The International Races of 1923 were beld there. Mail planes arrive and leave daily.

It is the largest and best privately united that daily.

Our course requires about two weeks, depending on the individual, and after its completion the refinements of the art can be gained only from experience. Commercial aviation is a rapidly growing industry. Don't delay! Enroll now!

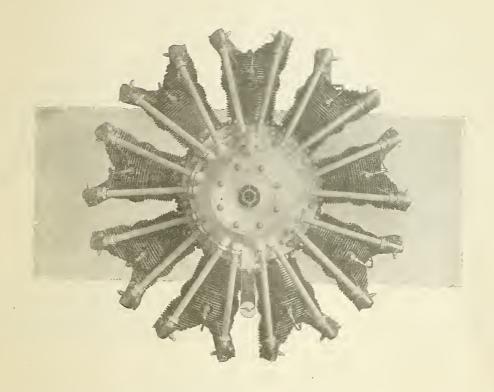
Write for Booklet

It is not necessary to purchase an airplane in order to take this course

### RPORATION

OPERATORS OF UNITED STATES AIR MAIL ST. LOUIS-CHICAGO LAMBERT - ST. LOUIS FLYING FIELD, ANGLUM, MO.

### THE "WASP"



The 'Wasp' has established entirely new standards in radial engine design. It provides greater dependability with considerably reduced weight per horsepower.

PRATT & WHITNEY AIRCRAFT CO-



### NEWS OF THE N.A.A.

#### NORFOLK

THE Norfolk Chapter was organized on February 15th. W. W. Mitchell, Manager of the Norfolk Assembly Plant of the Ford Motor Company, was elected president, and other officers were named as follows: Major William A. Coleman, vice-president; Goldsborough Serpell, treasurer; and C. Earl Townsend, secretary. Captain H. C. Cocke of the Naval Air Station and Major Oscar Westover, Commandant of Langley Field, were constituted honorary vice-presidents under the constitution and by-laws which were adopted.

The officers were authorized to appoint five additional members of the chapter to form with them the Executive Committee, and to select also fifteen committees to prepare for the holding of the Schneider Cup Races at Norfolk next fall. The Norfolk Chapter so far has only twenty-five members, but plans are being made to hold a big mass meeting at an early date, at which it is hoped this number will be increased many fold.

The chapter will not only interest itself in preparations for the races, but also constitute itself an air chamber of commerce. One of its major projects will be to bring about the establishment at Norfolk of a commercial flying field so that the city may take its rightful place in the development of this mode of transportation. It will also use its influence to have the city made a point on one of the proposed air mail routes.

#### DES MOINES

THE Des Moines Chapter held a special meeting in honor of General Mitchell on March 13 at the Hotel Savery.

General Mitchell gave a very interesting talk, and helped the chapter iron out many of their landing field problems.

The landing field committee of the chapter has been coöperating with the city council in choosing a landing field site.

#### WHEELING

THE Wheeling Chapter is making extensive plans to equip an up-to-date field for the local district. The closest field now is Langin field, located at Moundsville, on the U. S. Model Airway, half way between Washington, D. C., and Dayton, O.

It is planned to have an extension of the Pittsburgh-Cleveland air mail route to Wheeling, a distance of 50 miles via air.

A big meeting will be held in Wheeling in the near future at which Colonel William Mitchell will be the principal speaker.

The Wheeling Chapter now has 100 members. Jason C. Stamp, head of the member-hip committee, urges all interested in aeronautics to come to headquarters on Market Street and join.

#### AKRON

A KRON, OHIO, will be represented by two racing balloons in the National Elimination Race from Little Rock, Arkansas, April 29, for the P. W. Litchfield trophy and the right to represent the United States in the International race out of Antwerp, Belgium, May 30.

The balloon entered by Goodyear will be piloted by W. T. Van Orman, who with C. K. Wollam was the winner of the 1924-25 races from San Antonio, Texas, and St. Joseph, Missouri, and who has been a contestant in the last two International races abroad. He will be accompanied this year by W. W. Morton, veteran Goodyear balloonist.

J. A. Boettner, assistant aeronautic salesmanager for Goodyear, and one of the oldest pilots in the point of experience in this country, and Herburt W. Maxson, Goodyear aeronautic writer and president of the Commercial Aircraft Association, will man the second Akron balloon, entered by the Akron N. A. A. Chapter. This will be the first time a balloon will be flown in a national contest under the colors of this association.

The Little Rock event will be contested for with balloons of 35,000 cubic feet capacity using hydrogen. Eight balloons have been entered,

The Akron Chapter is now the holder of



Pilots of the Akron Chapter National Balloon Race Entry.

the Litchfield trophy by virtue of Van Orman's winning flight from St. Joseph to Reform, Alabama, last year. If he is able to duplicate his victories in the last two elimination races, he will be the first American balloon pilot to win the race three consecutive times.

#### LOS ANGELES

A DEQUATE airport facilities for Los Angeles were advocated at the regular meeting of the Los Angeles, or Southern California Chapter, on February 26, in the Studio Inn, Sixth and Vermont Avenue, Los Angeles. Regular Army, Reserve Army, commercial aviators, manufacturers, owners of private airports and officers and members of suburban aero clubs attended.

Lieut. Kane, commanding officer at Ross Field, told of the entry of a picked team from Ross Field to compete in the National Balloon Races to be held at Little Rock, Arkansas, April 29. This is the first time that Army Reserve officers have been entered, and the first time that California has ever been represented. Lieut. Walter Hamm and Lieut. Robert Lear will be the pilots of this balloon which has been loaned by the Goodyear company of California.

Major Willard, chairman of the airport committee, reported on the progress being made on the Los Angeles airport.

Col. F. B. Lahm, commander of the 9th Corps Area, and winner of the first Gordon Bennett Balloon Race, spoke of the strides being made by the Bakersfield and San Francisco Chapters and the excellent work that they have done.

Clarence Snethen, secretary of the Local Traffic Commission, offered the coöperation of his organization with the committee in securing a site for a municipal airport, and placed at the service of the committee a map showing the routes and connections of street transportation which may aid them.

G. Gordon Whitnall, director of the City Planning Commission, advised the committee not to confine its campaign to interesting the city officials, but to include the county officials, as the city bonding was almost impossible at present, whereas the county was in a position for a bonding issue of this kind.

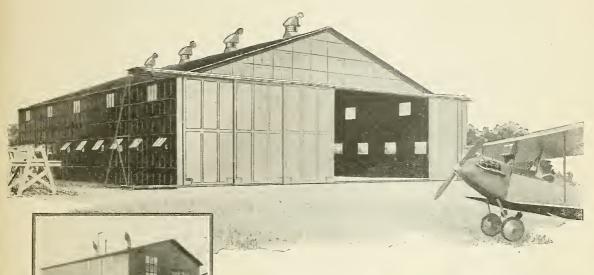
Wisner Gillette Scott offered a resolution that the members, individually and collectively, put forth every effort in scenting the Los Angeles Union Airport. The resolution was unanimously carried.

#### HONOLULU

"C ONDEMNATION proceedings for the acquisition of land for an airport in Honolulu are dragging along notwithstanding our efforts to expedite matters so that we may come into possession of the property," writes A. W. Van Valkenburg, whose unflagging interest in the Honolulu Chapter and things aeronautical has done so much to make this territory air-minded. "We are all very anxious to start clearing and grading in order that the land may be used as a landing field."

"The logical thing to do is for our existing transportation companies to take on air service as an adjunct to their regular business; and I believe that this may be the outcome of our efforts to provide aerial transportation between the Islands."

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Truscon Buildings as sure fire-safety with economy. Types to answer any requirement can be furnished. Truscon Engineers gladly co-operate with you.

TRUSCON Buildings are specially designed to serve as hangars, oil storage houses, machine and assembly shops for air craft of every description. They are non-burning and made of rust-resisting copper alloy steel. Low in cost, quick to erect and complete in every respect. Truscon Buildings meet air craft housing needs.

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# WITH the SERVICES

### MACREADY FLIES UP 37,579 FEET

LIEUTENANT John A. Macready failed to break the world's record in his altitude flight over McCook Field, March 13. The instruments on his plane indicated an altitude of about 39,000 feet and when the Bureau of Standards completed their calculations, it found corrected figures to be 37,579 feet, 2,000 feet short of the record of 39,586 feet made by Callizo. Macready was in the air one hour and fifty-six minutes.

The machine used on this flight was the XCO-5, a type of plane developed by McCook Field to replace the LePere which was used so successfully by Macready on his record breaking altitude flights of 1927.

The type of wings selected to give the high lift desired in the XCO-5 was the Joukowsky STAe-27A. A set of wings to this design was built in the Engineering Division shops of McCook Field. They present a total area of 600 square feet with an aspect ratio of 10. A detachable-blade aluminum alloy propeller, 10 feet, 6 inches in length with pitch adjustable on the ground was used.

The inside of the fuselage of the plane underwent considerable remodeling in preparation for the flight. The liquid oxygen flasks were located in the rear cockpit with tubes and regulators carried through to the front cockpit. The sealed rear cockpit carried the recording barographs and thermographs. The pilot's eockpit was completely lined, the floor and lower half of the walls with plywood, the upper half with guilted felt corduroy which, coming around the back of the pilot's seat, forms a taut eoekpit covering which fastens about the pilot's neck and extends to the cowling. The opening about the socket of the control stick is elosed over with corduroy, the whole interior being made snug against the entrance of outside winds. Through the eowling, which is of transparent celluloid, the pilot looks down

upon the instruments and controls, with each of which, some time during the flight, his eves or hands must be busy. There he sees the altimeter, the tachometer, the air speed indicator, the variable engine pressure gauge which indicates the difference of air pressure in the carburetor as altitude is gained, fuel level gauge, fuel pressure gauge, water thermometers for water leaving the engine and for water leaving the radiator, oil pressure gauge, thermometers for oil entering and leaving the engine, clock, oxygen flow regulator, ignition switch, battery control switch (the plane is equipped with a dual set of batteries so that if one runs down the pilot can switch to the second), emergency gasoline hand pump, radiator shutter control, throttle control, spark control, carburetor mixture control, supercharger blast gate control, gasoline shut-off valve and the airplane stick and rudder controls. A thermometer shows the air temperature inside the eockpit. A second altimeter registers the altitude according to the Federation Aeronautique Internationale reckoning.

In former flights, a temperature as low as 82½ degrees below zero Fahrenheit had been encountered. On the latest test a temperature of 71 degrees below zero was recorded, but the pilot did not suffer from the cold, due to the many precautions taken to protect him on his flight to the frigid upper regions. An extra heating apparatus was mounted on the exhaust manifold on the left side of the plane so that the cold air passing over the hot manifold and becoming heated is led through a tunnel and thence into a flexible conduit which extends into the interior of the cockpit.

The XCO-5 is powered with the 400 h.p. Liberty engine which delivers 400 h.p. at sea level. Since it has an output of but 50 h.p. at 35,000 feet unsupercharged, a supercharger is a requisite of high altitude work. The supercharger is an air compressor which keeps the air pressure in the earburetor at sea level pressure at heights where, owing to

the natural decrease in the air pressure, the horsepower gradually falls away to but a fraction of its original output.

An altitude record was not the prime object of these tests. The development and testing of altitude equipment for military purposes is of the utmost importance. Aetual combat will scarcely be waged above 25,000 feet, the mental and physical faculties of man being too subnormal above this height for quiek and efficient accomplishment. With the development of accurate bomb sights, bombing can be carried on as high as 30,000 feet, as less energy is demanded for bombing than for the more strenuous operations of pursuit combat. Photographic work may be accomplished. however, as high as 35,000 feet. Pietures of great areas, made at this height near Me-Cook Field and enlarged, have proved to be remarkably clear in detail. Such views over enemy territory would be of great value for war purposes. The plane would be out of sight and hearing of those on the ground and beyond the range of antiaircraft gun fire.

### BOOK SUPPLY EXHAUSTED

THE February issue of Aero Digest announced that the Air Service had available for free distribution a limited number of books and drawings on aeronautical subjects. We have been advised by Major Harmon, Chief of the Information Division, that the response was so immediate and overwhelming that the supply was exhausted within a few days and hundreds of requests from all parts of the country are still being received.

The work involved to answer each of these communications stating the inability to meet any further requests has put such a heavy burden on the limited personnel available in the information office that it is impossible to reply in each case, and they have asked us so to state.

### AMERICAN LEGION PARIS POST

THE Aviation Committee of Paris Post, American Legion, is composed of: R. C. Wood, chairman; Major B. N. Yount, U. S. Air Attaché for France; Lieut. Col. C. W. Kerwood, Cherufienne Escadrille (Morocco Service); Major Charles D. Westeott, American Consul.

The Paris Post takes an active interest in aviation occurrences in France, particularly in the commercial air lines. A delegation of members from the post recently made an inspection tour of the Air Union hangars at Le Bourget.



Lt. Macready and the XCO-5 plane in which he reached an altitude of 37,579 feet.





Catapulting a Vought UO-1 from U.S. S. Pennsylvania

© Int'l.

## CATAPULTING

VOUGHT Standardized Observation Planes are the exclusive Aircraft Equipment for the Catapult-equipped Battleships and new Scout Cruisers of the United States Navy.

The convertible features of these Airplanes make them quickly adaptable for land or water use. Reliability, high performance and long life have earned an enviable reputation.

BUILT FOR EXACTING SERVICE

#### CHANCE VOUGHT CORPORATION

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Say you saw it in AERO DIGEST



The Army Air Service helium tanks.

#### NEW HELIUM TANKS

DUE to the need of better facilities for transporting helium gas from the plant to airdromes, the Army Air Service asked the Bethlehem Steel Company, several months ago, to construct a gas carrying unit. The result was a tank car composed of three large cylinders. The cylinders will hold a total of 206,000 cubic feet of helium under 2,000 pounds of pressure. This is sufficient to inflate any ordinary sized blimp.

Before the development of this tank car helium gas was carried in small cylinders, 1,200 of which were necessary to inflate an airship of 210,000 cubic feet capacity. Also, in emptying the small cylinders about 15 per cent of the gas was lost through leakage. The large tanks not only reduce this waste, but also cut down the amount of work necessary in tapping so many small cylinders.

In time of war these gas unit cars could be shipped around with great ease; and the fact that one car of gas will fill one airship makes the advantage very great.

### AIRCRAFT SQUADRONS' WINTER PRACTICE

THE Aircraft Squadrons, Scouting Fleet, consisting of Scouting Squadron VS-1 and Torpedo Squadron VT-1, have completed their flight from Hampton Roads to the Guantanamo area with great credit, according to advices which have been sent from the fleet. The squadrons are attended by the aircraft tenders, the "Wright", the "Sandpiper", and the "Teal".

The VS-1 and VT-1 left Hampton Roads for Guantanamo on the 20th of January and made their first stop at Charleston. On the 22d of January they hopped to Fernandina. On the 23rd and the 25th they proceeded to Miami, and on the 26th they all arrived at Key West. On January 31st they flew from Key West to Cienfugos and on the 3rd of February they proceeded to Media Luna Bay, in Guacanayaho Bay, in the Guantanamo area.

## GEN. PATRICK TO GET ITALIAN DECORATION

MAJOR GENERAL Mason M. Patrick has been authorized by a special act of Congress to accept the insignia and diploma of Grand Officer of the Order of the Crown of Italy, conferred upon him by the Italian Government.

Thirty-six United States Army officers will receive decorations from foreign nations under this authorization.

#### NAVY TO HAVE RADIO WEATHER REPORTS

THE Navy Department will establish a radio weather information service within the next month for the New York-Washington-Norfolk area

These bulletins will be available for all radio equipped aircraft in flight. It involves the use of high and normal frequencies so that it will be available to a plane equipped with either type of apparatus.

This general plan is being discussed with the Army Signal Corps and Army Air Service with a view to reaching an agreement within the Services of a well coördinated program. It is hoped that a country-wide system will be available for all aircraft, naval, military and civil.

#### 7000-MILE AIR TRIP

A 7,000-M1LE flight from Philadelphia to San Diego, via the Antilles, Canal Zone, Central American and Mexican ports, is to be made this summer by United States Naval aviators.

Two giant PN-10 seaplanes, each equipped with two 1,500 horsepower motors, which are nearing completion at the Naval Aircraft Factory at Philadelphia, are to be used on the trip. These planes have a far greater cruising radius than the PN-9's that failed to make the Hawaiian flight.

Lieut. Alan Snody, second in command of the Hawaiian flight, will be in charge.

#### FOUR

In the group shown here 4 OUT OF 5 of the men wearing goggles wear MEYROWITZ GOGGLES. They flew from Washington, D. C., to Santa Monica on the longest flight ever taken by such a large number of passengers in one airplane.



#### FIVE

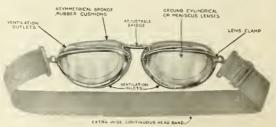
From left to right: Lt. E. R. McReynolds, the pilot; Capt. Lloyd N. Keesling; Capt. W. P. Hayes; Capt. F. E. Galloway; Capt. C. H. Reynolds; and Technical Sergeant Harry Glascock.

#### NUMBER 6 U. S. AIR SERVICE "LUXOR" GOGGLE

This LUXOR Goggle is our latest, made especially for the U. S. Air Service. Providing an unobstructed field of vision, comfortable facefitting rubber cushions that permit continuous wearing without irritation. Fogging a n d steaming of lenses prevented by ventilators with dustproof inlets.



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Adjustable bridge insures fit and face comfort. Lenses held in place by special instantly locked metal rim, permitting quick replacement. Light metal construction and flanged eyecup rim prevent possibility of cutting face in case of accident. Extra wide continuous adjustable head band.

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220 West 42nd St., New York, N. Y.

## WITH the INDUSTRY

#### THE POPULAR POLE

THREE American expeditions are taking part in the great polar quest of 1926. Lieutenant Commander Richard Byrd will head one, starting around the first of April; the Detroit Arctic Expedition, which is already in Alaska, another; and Lieutenants Wade and Ogden, 'Round the World Flyers who recently resigned from the Army Air Service, will make the third.

The Shipping Board Steamship Chantier, equipped with a special ice-breaking nose, has been chartered by the Byrd expedition to carry their planes to King's Bay, Spitzbergen. There the planes will be equipped with skids for the flight to Cape Morris Jesup, the northernmost point of land, from whence their dash to the Pole will begin.

Commander Byrd will be accompanied by Floyd Bennett, Chief Petty Officer in the Naval Air Service who flew with Byrd on the MacMillan Expedition last summer, and G. O. Noville, fuel engineer of the Vacuum Oil Company.

John D. Rockerfeller, Jr., Edsel Ford, Thomas F. Ryan and Vincent Astor are financing the expedition.

Captain George H. Wilkins and Major Thomas G. Lanphier of the Detroit Arctic Expedition are in Fairbanks, Alaska, preparing their flying equipment for the flight to Point Barrow. Capt. Wilkins plans to hop off from there for the Pole—800 miles north of Point Barrow. If land is found Major Lanphier will claim it in the name of the United States by dropping an American flag, then, without landing they will take bearings, photograph the discovery and return to Point Barrow. Should no land be sighted, however, they will continue on to Spitzbergen.

The third American attempt will be the American University Alumni Expedition, and is backed by prominent alumni of Harvard, Yale, Princeton and the University of Pennsylvania. It was first suggested by Robert Anderson Pope, New York Engineer and Harvard graduate who has spent five years in the Aretic. Lieut. Leigh Wade will lead the expedition and Lieut. II. H. Ogden will be his assistant. Their main base will be established at Point Barrow early in July. From there an extensive survey of the Arctic country will be made, and a flight to the Pole will be attempted. This expedition will be equipped with five Douglas planes, similar to the 'round-the-world cruisers.

Foremost among the foreign polar flights is the Amundsen-Ellsworth Trans-Polar Flight expedition which will attempt to fly in the dirigible Norge over the North Pole and to traverse the unexplored region in the midst of the polar sea. Colonel Umberto Nobile, who designed the dirigible, will pilot it. The route of the airship will lie through either London or Paris, thence across Germany to Leningrad and thence to Spitzbergen. This route is undoubtedly longer than the more direct one via London and the west coast of Norway, but is considered much safer as it is not beaten by the strong winds that rage in the North Sea at this season. The polar dash will be made from either Spitzbergen or the western coast of Norway.

The French in their attempt to reach the North Pole are going to use motor-driven sledges equipped with a special front wheel with "feet" to grip the ice and drag the sledge forward.

The Soviet Government is reported to be organizing an air expedition. Northeastern Siberia has been selected as the point of departure.

The Germans are also said to be engaged in forming a polar expedition. Dr. Fridtjof Nansen, the noted explorer, is acting as adviser to this group.

The polar region therefore promises to be a very popular resort this summer.

## COURSES OFFERED AT GUGGENHEIM SCHOOL

THE Daniel Guggenheim School of Aeronautics, New York University, offers a four-year undergraduate course leading to a degree, to which students are admitted by high school certificate or by entrance examination. They also offer a one-year postgraduate course leading to a higher degree, and open to graduates of engineering colleges.

Students over twenty-one years of age, who have had aircraft experience and who do not wish to take the regular four-year course leading to a degree, may be admitted readily as special students in aeronautical engineering. However, such applicants are advised to take two years of study at the University; one year in mathematics and applied mechanics, and the second year in their specialized aeronautical subjects. Without the fundamental knowledge of mathematics and applied mechanics, students would find their professional work useless to them.

The University does not offer instruction in flying, although students are encouraged to take up flying during the summer vacations with private flying schools, or by joining either the Army or Navy Air Service Reserve

## AMERICAN AIRPLANES FOR FOREIGN MARKETS

THE exportation of American aircraft products, as shown in the following statistical study prepared by the Department of Commerce, although comprising only a small percentage of automotive exports, should be of decided interest to persons fostering aeronautical industrial development in the United States. Other branches of the automotive industry, especially the motorcycle branch, rely greatly upon foreign markets, and aircraft producers should consider the cultivation of foreign fields as an outlet for their products. An increasing number of aircraft and aircraft equipment sales are expected this year, and aeronautical producers and exporters are urged to watch "Commerce Reports" (the weekly publication of the Bureau of Foreign and Domestic Commerce) and the "Automotive Weekly News Bulletin" for notices of specific trade opportunities. Only those companies listed on the "Exporters' Index" are entitled to reeeive the information contained in the trade opportunities; applications for listing should be made to the nearest district office of the Bureau of Foreign and Domestic Commerce.

#### 1925 Aircraft Exports Gain 35 Per Cent

There were 80 airplanes, seaplanes and other aircraft exported from the United States during 1925, representing an increase



Students of the Daniel Guggenheim School of Aeronautics examining the Wright "Whirlwind" engines to be used on the Byrd Polar Expedition.

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MPH, new .2—Airspeed indicator, Bristol, luminous dial, 0 to 160	\$5.00
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MPH, used  3—Air gauge, 2" non-luminous face, 0 to 10 lbs., used	.25
4—Air gauge, 2 luminous face, 0 to 6 lbs., new	.50
5-Air pumps, (hand) brass, 1½" barrel, new	.50
6-Altimeters, Taylor, 5" luminous face, 15000 ft., new	3.00 1.00
7—Altimeters, Taylor, 5" luminous face, 15000 ft., used 8—Altimeters, Taylor, 3½" luminous face, 25000 ft., new 9—Altimeters, Taylor, 3½" luminous face, 25000 ft., new 10—Altimeters, Zenith, 3½" luminous face, 25000 ft., new 11—Altimeters, Zenith, 3½" luminous face, 25000 ft., used 12—Altimeters, Schneider, 3½" luminous face, 25000 ft.,	5.00
9-Altimeters, Taylor, 31/2" luminous face, 25000 ft., used	3.00
10-Altimeters, Zenith, 31/2" luminous face, 28000 ft., new.	6.00
11—Altimeters, Zenith, 3½" luminous face, 28000 ft., used	3.00
12—Altimeters, Schneider, 3½" luminous face, 20000 ft.,	6.00
13-Advertising novelties (toy ball, paper parachutes), box	0.00
of 24	2.00
14—Brass hose-tees, 3/8" and 1/2" hose size 15—Brass shut-off cock, 1/4" P.T., with 5/16" nut and	.10
15-Brass shut-off cock, 1/4" P.T., with 5/16" nut and	.25
cone complete 16-Control cahles for JN4D rudder and elevator, new,	.20
each wire	1.00
17-Clamps, hose, wire (as used on Liberty motor), 3/4-1"	
per 100	1.50
per 100	2.00
19-Compass, small, navy, new and completely overhauled	7.50
20—Copper tacks, \(\frac{1}{2}\)" long, \(3/16\)", \(\frac{1}{2}\)", \(5/16\)" and \(\frac{1}{2}\)".	
per pkg. 21—Cord (shock absorber), 5%", white-red or white-blue	.25
(mfg. 1923), per ft	.10
22-Covers for DH propellers, new, army duck, perfect	-20
condition	2.50
23-Covers for 150 Hisso propeller, waterproof mohair,	0.00
newly made 24—Covers for OX5 propeller, waterproof mohair, newly	2.00
made	1.00
25-Covers for JN4D front cockpit, waterproof mohair,	
with fasteners, newly made	2.00

	RICE
E4 M A C1 TT 1 2 000 1	
ol-Motors, Siemen-Halske 200 hp. rotarys in original	
51-Motors, Siemen-Halske 200 hp. rotarys in original hoxes (one is less equipment), 2 for	750.00
52-Motors, Le Rhone 80 hp. in original hoxes with tools	90.00
and spares 53-Liberty 12, high compression, run only few hrs., per-	30.00
fect condition	100.00
54-Struts, JN4D or Canuck wing, inner or outer, with	
fittings, new	.50
55-Struts for JN4D or B, fuselage station No. 3 vertical, new	.25
56-Struts for Canuck aileron, long diagonal, new	.50
57-Struts for Canuck aileron, short straight, new	.50
58-Struts for Curtiss H aileron, short spacer, new	.50
59-Struts for JN4D or Canuck center section, new	.50
60-Struts for JN4D or Canuck cahane mast, new	.25
62*—Spreader-board struts for Canuck (two pieces), new	.25
63*-Landing gear for Canuck, complete with axle, less	.50
wheels, new	12.00
64*-Landing gear for Canuck, complete (less wheels and	
axle), new 65*—Landing gear, Ackerman, fits JN4D or Canuck, com-	10.00
plete (less wheels), new	10.00
66*-Landing gear for Bristol Fighter, complete (less	
wheels), new	10.00
67-Wing-skid for JN4D or Canuck, ash, new	1.00
68-Wing-skid, JN4D or Canuck, hickory or metal, new 69-Engine hearers for JN4D or Canuck, new	1.25
70—Engine hearers for JN4D of Cantick, new	1.00
71-Tires, Goodyear cord, size 700 x 100, new	4.00
72-Tubes, Goodyear, size 700 x 100 (can be used on 26	
x 4), new	1.00
73—Tires, Goodyear cord, size 26 x 3, new	2.50 1.00
75—Tuhes, Goodyear, size 200 x 200, new fresh stock	6.05

7		
		RICE
	26-Covers for JN4D rear cockpit, waterproof mohair, with fasteners, newly made	2.00
	27-Covers for JN4D motor, waterproof mohair, newly	
	made	1.50
	28-Cushions for JN4D, Canuck, DH or Spad, new	1.00
	29—Dope in 50 gal. drums and barrels (unfit for aircraft), per hbl.	5.00
	30—Gas gauges, miscellaneous sizes for shallow tanks, all	
	new	.25
	31-Gas gauges, miscellaneous sizes for deep tanks, all new	.75
	32-Goggles, Triplex non-shatterable glass, new heavy	2 00
	frames	3.00 3.50
	33—Gaskets for Liberty motor, complete set	
	34—Hisso valves, brand new, perfect condition	.50 1.50
	35—Map case, 9" x 19", leather, new, perfect condition 36*—Propellers for Hisso 150-180 (surplus Govt, stock),	1.00
	various makes	10.00
	37*—Propellers for OX5-90 hp. (surplus Gov't stock),	10.00
	various makes	6.00
	38-Motors OX2, in original hoxes as received from	
	Gov't.	150.00
	39-Magnetos, Dixie 800, for 150-180 Hisso, hrand new	30.00
	40-Magneto, Berling D-81, new (without hreaker assembly)	5.00
	41-Magneto, starting booster, various makes, "as is"	1.00
	42-Spark plugs, A.C. hall top, for Liberty motor, new	.20
	43-Spark plugs, A.C. clip top, 78"-18 thread (automo-	
	hile) new	.25
	44—Tachometers, Warner, type 0-2000, all new	2.50
	45—Jet wrench, water-pump wrench, for OX5	.00
	OX5. new	4.00
	47-Wire manifolds, with all wires and terminals, for	
	OXX6, new	4.00
	48*-Seats, wicker, low back, fully upholstered	1.25
	49-Tires, Goodyear cord, 900 x 200, clincher, new stock 50-Tires, Goodyear cord, 32 x 6, straight side, new stock	35.00 25.00
	ou-lires, Goodyear cord, 32 x b, straight side, new stock	25.00

ITEM	PRICE
76-Tubes, Goodyear, size 750 x 125, new fresh stock	. 4.00
77*-Elevators for Canuck, covered, natural finish, new	4.00
78*-Elevators for JN4D, covered, natural finish, new	. 8.00
79 Fin (vertical), for JN4D or Standard, covered, new	. 1.50
80-Wheels, 26 x 4, slightly used	. 5.00
81-Wheels, 750 x 125, slightly used	
82-Wheels, 26 x 4, Ackerman, new	
83-Pulleys, brass, with housing, 27/8" for 1/8" cahle, new	.20
84-Map hoards, mahogany, used on JN4D, new	10
85-Wind shields, old type DH, new	.50
86-Starter, Bijur electric, for Liherty	
87-Tachometer shaft, J-M, 71/2 ft., brand new, complete.	
88-Tool kits for Gnome motor, complete, new	
89-Propeller wrench for large nut of OX5 motor, new.	
90-Propeller wrench for small nut of OX5 motor, new.	
91*-Wing, Canuck, lower right or left, newly covered	
natural	
92*—Wing, Canuck or Jenny, upper right or left	
93*-Wings, JN4D, complete set, uncovered (need repairs) set	
94—Instruments: altimeters, airspeed gauges, tachomet	
ers (unserviceahle)	50
95-Instruments: compasses, thermometers, various other	r
aircraft gauges	50
96-Guides, overhead, for control wires on JN4D, new	10
97-Spokes for 26 x 4 wheel, nickel-plated, new	10
98-Lot 17: Mixed lot of new thimbles and clips, all size:	
10 lh. box	. 1.00
99-Lot 27: Mixed lot of pulleys, clips and eye-bolts, 1	.0
lb, hox	1.00
100-Lot 37: Mixed lot of bolts, nuts, washers, wood an	
machine screws, 10 lh. box	
101-Lot 47: Mixed lot of turnbuckles, clevis pins an	d
shackles 10 lb hox	1.00

(†) These lots have material of great value.
 (\*) Items marked with \*, crating charges extra.

Full payment must accompany orders under \$10. 50% required on orders over \$10.

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of 35 per cent over the 56 exported during the preceding year. A slight decrease (attributable to the falling off in aircraft parts and engine equipment) occurred in the value of all aircraft products exported during the past year when their value was \$783,659, or \$14,614 less than the value of combined aircraft products exported during 1924.

#### Trend Shows 1925 to be Record Year

A significant feature of last year's aircraft exports is that the postwar record attained in 1920, when 65 machines were exported, was surpassed. The fact that there has been a steady increase since 1922, culminating in the record attained during 1925, should give rise to a warranted optimism on the part of aircraft producers in the United States who are competing in foreign markets with heavily subsidized European producers.

The following tables show the postwar trend of all aircraft product exports with the exports from the U.S. during 1913:

#### EXPORTS of AIRCRAFT PRODUCTS

	Airplanes and seaplanes		e	ifts parts, xcept es and tires
Year	No.	Value	Pounds	Value
1913	29	\$81,750	(b)	\$25,802
1918	48	607,255	(b)	14,670,269
1919	44	215,300	(b)	3,249,226
1920	65	598,274	(b)	554,375
1921	48	314,940	(b)	157,608
1922	37	156,630	471,495	265,481
1923	46	308,151	275,275	58,949
1924	56	411,458	165,472	165,926
1925	80	511,282	95,248	101,584

		her craft	Aircra engine	
Year	No.	Value	Number	Value
1922 1923 1924 1925	(a) 2 3 (d)	(a) \$900 1,280 (d)	147 80 146 73	\$72,819 65,558 219,609 170,793

(a)—No aircraft other than airplanes and seaplanes were exported prior to 1923.

(b)—Statistics not shown in pounds prior to 1922.

(c)—Not separated from other internalcombustion engines prior to 1922. (d)—Included with airplanes and sea-

planes.

#### Latin America Takes 65 Per Cent

During 1925 the percentage of airplanes, seaplanes and other aircraft sent to Latin America comprised 65 per cent of those exported to all countries, as compared with 60 per cent of the total exported there during 1924. Argentina was the leading market last year, while Mexico which led in 1924 when it received 16 planes valued at \$150,300 dropped to seventh place. During the past year Germany supplanted the Netherlands as the leading market for engines, and it is a significant fact the average value of those exported to the former country last year was over \$2,400, indicating that the engines were up-to-date designs and in all probability not from war stocks. In point of value the United Kingdom led as a recipient of aircraft parts taking the place

held by Mexico in 1924 when parts were received by that country weighing 65,736 pounds and valued at \$77,340.

The following tables show aircraft product exports by countries of destination:

#### MARKETS FOR AIRCRAFT PRODUCTS—1925

Airplanes, Seaplanes and o	ther	Aircraft
Country of destination	No.	Value
Argentina	25	\$177,200
Canada	15	14,900
Brazil	10	61,975
Cuba	9	94,000
Philippine Islands	5	83,958
United Kingdom	5 5 3	11,320
Mexico	3	5,000
Colombia	. 2	33,879
Salvador	2	8,800
Java and Madura	1	11.750
Belgium	1	7.000
Honduras	1	1,000
Australia	1	500
Total	80	\$511,282

#### Aircraft Engines

Country of destination	No.	Value
Germany	29	\$70,558
Canada	11	38,492
Siam	10	1,200
United Kingdom	6	27,676
Netherlands	6	14,682
Argentina	5	14,180
Brazil	2	2,500
New Zealand	2	355
Mexico	1	950
Salvador	1	200
Total	73	\$170,793

## Aircraft Parts except Engines and Tires Country of destination Pounds Value United Kingdom ..... 4,062 \$48,064

United Kingdom	4,062	\$48,064
Canada	55,093	26,813
Honduras	10,282	5,029
Peru	3,848	3,430
Netherlands	1.769	2.795
Mexico	2,559	2,788
Argentina	1.832	2,386
Japan	711	1.918
Brazil	3.928	1.710
Cuba	2,234	1.432
Italy	410	1,358
Colombia	5,364	1,053
Russia in Europe	1,014	821
Siam	285	618
New Zealand	434	390
Australia	375	376
Germany	220	250
Venezuela	570	224
China	45	55
Chile	45	40
British South Africa	168	34
	100	0 1

 ish South Africa...
 168
 34

 Total
 .......95,248
 \$101,584

#### DEGREE CONFERRED ON DR ARNSTEIN

DR. KARL ARNSTEIN, vice-president of the Goodyear-Zeppelin Corporation, the builder of the airship "Los Angeles" and ninety other Zeppelins, has had the honorary degree of doctor of engineering conferred upon him by the Technical University of Aachen, one of Europe's foremost scientific institutions. He was awarded the degree of doctor of technical sciences by the Technical University of Prague, Jan. 18, 1912.

The honorary degree was granted to the Akron man by the president and faculty board of the famous old university in recognition of "his eminent merits and accomplishments in the development of airship construction, and especially for the establishment of scientific foundation of design and calculation of the rigid airship," his diploma from Aachen stated.

#### BIDS INVITED

S EALED proposals will be received at the Post Office Department until noon, May 1, 1926, for carrying the United States mails on the following routes from July 1, 1926, (or such subsequent date as the Department may order) to June 30, 1927:

New Orleans, La., to connect with steamers at Pilottown, La. (about 80 miles) and return, or at Port Eads, La. (about 92 miles) and return.

Seattle, Wash., to connect with steamers at Victoria, B. C. (about 84 miles) and re-

#### GARVAN PRESIDENT OF BURNELLI CORP.

A T the annual meeting of the Remington-Burnelli Aircraft Corporation the following officers were elected: Thomas F. Garvan, president and treasurer; Vincent J. Burnelli, vice-president and general manager; Edward A. Matthews, assistant treasurer, and Paul Ostruk, secretary. The name of the corporation was changed to the Garvan-Burnelli Aircraft Corporation.

The company have acquired factory buildings on Broad Street where they intend to construct several large experimental planes, among these to be the Model GB 3 which will be prepared especially for the Sesquicentennial at Philadelphia. At the New Jersey factory an experimental heliocopter has recently been completed and is at present undergoing tests.



A group of students of the Sweeney Aviation School.

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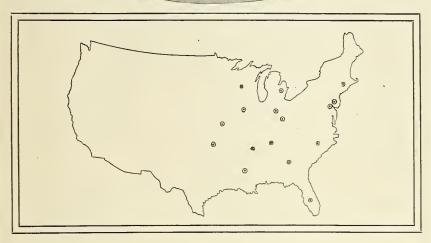


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2320 N. Saginaw St., Flint, Mich.

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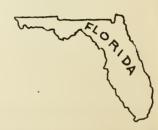
Cincinnati, Ohio.

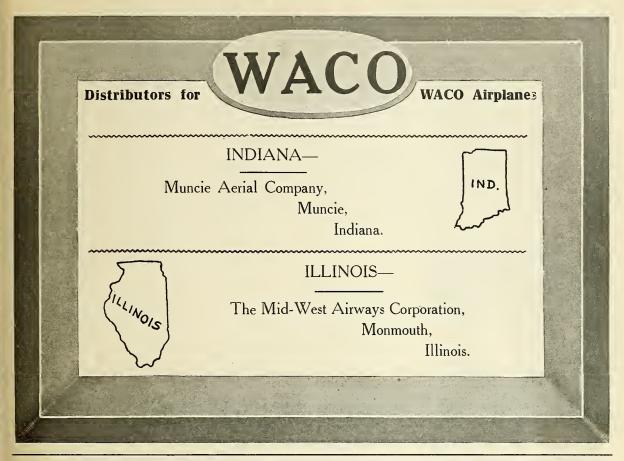
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Otis A. Hardin.

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Florida.





#### PITTSBURGH AERO CLUB

THE Aero Club of Pittsburgh, which was instrumental in securing Rodgers Field as an airport for Pittsburgh, is now sponsoring an Air Board for the administration of the field. The board would be composed of five members, each of whom would represent the City, County, Aero Club, Chamber of Commerce and the public at large, the latter to be elected by the other four members

The officers of the Aero Club, which is composed of three hundred members, are: Raymond M. Marlier, president; Joseph M. Slater, first vice-president; Robert A. Laedlein, second vice-president; William W. Booth, third vice-president; Ray A. Tucker, secretary; Louis T. Barry, treasurer. The Board of Governors are: William E. Close, Jack I. Grow, John J. Feery, H. Frank Mc-Caffrey and Theodore Taney.

An administration building, two steel hangars and a fueling station belonging to the government have been constructed and nine training type planes are now in operation there for the use of Army Reserve Officers in the district. A Regular Army Air Service Officer, 1st Lt. Royal B. Lea, is in command, and is assisted by three civilian mechanics.

This field was named Rodgers Field in memory of Calbraith Perry Rodgers, a Pittsburgher, who, in 1911, in an old Curtiss Pusher, flew from the Atlantic to the Pacific coast; and while this flight was made in a number of hops, it was the first transcontinental flight. His plane is preserved in the Carnegie Museum in Pittsburgh.

It is a municipal airport for the use of the public, and at present under the guidance of the U. S. Government in cooperation with the city and county authorities.

## FORD BUILDING NEW PLANT AND HANGAR

NEW airplane manufacturing plant and a new hangar having a housing capacity for fifteen or more airplanes, forming one of the largest and most modern aircraft developments in the country, will be erected within the next few months at the Ford Airport at Dearborn, Mich., to replace the building of the Stout All-Metal Airplane Division of the company recently destroyed by fire. The new airplane plant, which is to occupy part of the site of the former building, will be three times as large and will have a floor area of 60,000 square feet. It will be fitted with every modern facility for the manufacture of airplanes laid out in the standard Ford system of progressive production. Materials will enter one end of the building and proceed through the various stages of manufacture, emerging as completed airplanes.

An addition also is planned for the present airport hangar which will house a dynamometer room for testing airplane engines, as well as other test rooms. With the

completion of the new hangar building the present hangar, with its addition, will become more of a maintenance and repair station for airplanes operating in the Ford Air Transport.

#### ITALY ENTERS 1926 SCHNEIDER RACE

THE Aero Club of Italy has officially announced its entry of three seaplanes in the Schneider Cup Race to be held during the week of October 24th, at Norfolk, Virginia

#### PORTERFIELD SCHOOL

THE Porterfield Flying School, which is southeast of Kansas City, Mo., have made arrangements for taking care of tourists free of charge, and gladly welcome them to stop at their field.

They have recently started a "Fly it Yourself" service, which is proving to be quite a good revenue producing business. Flyers who do not own planes are glad to take advantage of this service.

Last year the company successfully trained a large number of students and they expect to have more than a hundred students during this summer season.

They are also going to manufacture and sell their newly designed steel-tube fuselage planes this summer.

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#### CURTISS FLYING SERV. HAS A RECORD YEAR

N these days when aeronautical controversies are all the rage and when so much "expert" knowledge of a contradictory nature is published that the layman cannot help but be confused, it is interesting and stimulating to find a report based on actual operating figures that cannot fail to encourage those who believe that there are commercial possibilities in flying.

The report of The Curtiss Flying Service, Inc., for the past year shows a total of 2.265 flying hours (approximately 175,000 miles), 2.080 hours of which was paid commercial flying, totaling approximately \$90,000, a gain of more than 331/3 per cent over 1924. The flying time was divided as follows:

Paid flying,-instruction, 580 hours; passengers, 354 hours; aerial photography, 320 hours: cross-country, 466 hours; amphibian, 200 hours; student solo, 80 hours; miscellaneous, 80 hours.

Flights made without monetary return,testing, 155 hours; demonstration and complimentary, 30 hours.

The personnel of the company comprises four regular pilots, one chief mechanic, two mechanics, two helpers and one clerk. The inventory shows eighteen ships-JNs, Standards, Orioles, one amphibian, and a DH. with the necessary spare motors. It is anticipated that the Lark, the new commercial machine just developed by the Curtiss Company, will be used extensively in 1926, thus increasing the operating possibilities because of its increased speed and carrying capacity over the present equipment.

During its seven years of operating, covering over 750,000 flying miles, the company has never had a fatal accident. This record compares favorably with that of any modern method of transportation.

Sixty students were taught to fly and a large percentage passed the FAI test given by the National Aeronautic Association. Over four thousand passengers were carried. mostly on the popular \$5 hops of ten miles. In the aerial photographic field the company does no actual photography but furnishes the flying service for all the large aerial photographic companies.

A word of explanation about the 466 hours listed as cross-country flying. This is probably the most interesting of the activities and approaches the field of commercial transportation which is the big future of the airplane. At the time of the eclipse eight planes left Curtiss Field with photographers, reporters, and scientists to observe the phenomena from the air. This was particularly noteworthy as the thermometer registered zero, motors started with difficulty, and yet every machine scheduled was in the air on time. Five machines covered the inauguration of President Coolidge at Washington, carrying films and pictures to Dayton, Chicago, Cleveland, and Philadelphia, New York and Boston. This event marked an important step in commercial aviation in that the Army and Navy, in spite of great political pressure from conINSURANCE .....

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gressmen and newspapers, cooperated with the flying companies in refusing to supply Government planes for carrying these pictures and films in direct competition with the industry. A racing fan chartered a machine for the Kentucky Derby. Films and pictures were flown in from Cave City at the death of Floyd Collins. Three machines filmed the race between the Twentieth

Century Limited and Gar Wood's boats. Mayor John Smith of Detroit was the guest of the New York City Fire Department at a banquet in New York but had a speaking engagement in Detroit the following afternoon. The airplane was the only means of transportation that would allow him to keep both engagements. He attended the banquet in New York, left Curtiss Field at six a. m., slept most of the way to Detroit, had time to have lunch with Major Lanphier, Commanding Officer of Selfridge Field, and arrived at the Ford Airport in plenty of time for his speech. The son of Mrs. Anne Stillman was injured at their Canadian camp. Unwilling to trust a local physician Mrs. Stillman called New York and a physician was flown direct to the camp, making the journey in one-fifth of the time possible by any other means of reaching the camp, and in about the same time the local physician would have taken by boat. Hours before the man on the street had heard of the Shenandoah accident airplanes were leaving Curtiss Field, hired by the New York dailies, carrying reporters and bringing back pictures of the wreck. Six planes belonging to the Curtiss Flying Service, Inc., covered this disaster, flying more than 2,500 miles in two days and each one accomplished its mission successfully. One enterprising firm selling lunch wagons chartered a plane to take their sales manager to a convention in New Hampshire, thus getting the "hop" on his competitors and selling ten wagons before they even ar-

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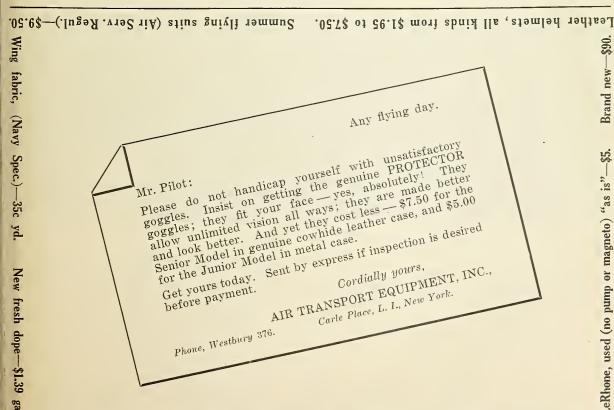
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rived on the ground. The baseball series, football games, boat races, the submarine disaster, in fact practically every news event of importance was covered by machines belonging to this company.

#### NEW ENGLAND NEWS

BY DANIEL ROCHFORD

 ${
m M}$  ARCH saw wide-spread aerial activity in Boston and New England. Headline events of the month included the setting aside of \$25,000 by Mayor Malcolm E. Nichols of Boston in his annual budget to provide lighting, roadways, runway improvements and better water and sewage facilities at the Boston Airport. The State legisla-



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ture of Massachusetts at this writing seemed favorably inclined towards passing a bill to extend the lease of the Boston Airport site to the Federal government for fifteen years.

At present the Boston Airport finds itself in this fix. It is located on pumped land made by the state out of flats in Boston Harhor. It is in the heart of Boston, literally, and is pronounced by experts to be the best airport site in the country. It is only a few minutes from the big down-town offices by ferry. The state in 1922 leased the land to the Federal government at a nominal rental of \$1 a year for ten years. The government and state together put up four hangars—two for regulars and reservists and two for National Guard flyers.

Captain Horace N. Heisen, who has just been appointed to succeed Lieutenant Robert J. Brown, Jr., Airport Commander, arrived here last week to break in to his new duties. Brown leaves for Hawaii and foreign service April 18th.

The Boston Airport is second in the entire U. S. in the amount of flying done by reservists.

There is in addition a large amount of commercial flying done at the port. The lease provides that the airport shall be open to commercial people just as our highways are—free but subject to reasonable state regulation such as requiring registry and inspection of planes and pilots.

The extension of the lease means the erection of commercial hangars here by the

Boston Airport Corporation and probably by the Colonial Air Transport, which has the Boston-New York air mail contract.

Lieutenant Reginald D. Thomas has been reappointed commanding officer at the Naval Reserve Air Station at Squantum, just outside Boston. He will train the usual quota of college men this summer and in addition it is expected that about fifteen Marines will be sent here for training. His station has just had three UO Voughts added to its line of ships, making four of this type here.

A record flight was made to Boston early in the month from McCook Field by Lieutenant Lyman P. Whitton with Captain Bradley Jones as observer. Tests of various instruments were made. The 725 miles flight was made in a DH in 5 hours and 50 minutes. Most of the trip was flown at 6,000 to 10,000 feet altitude.

By weeks flying picked up during March from 11 hours and 17 minutes the last week of February to 12 hours and 15 minutes the first week of March, then with the snow and ice melted away, to 29 hours and 50 minutes, the second week, and up these past two weeks to over fifty hours, This does not include commercial operator's time. Travel Air flew beginning the 12th of March an average of several hours every fair day. They have had but one plane here, "Cv" Caldwell heing in the south on his flying salesman tour with their other Boston OX-5 job. On May first they expect Boston delivery of a Travel Air with a Wright Whirlwind motor. This has been bought by

Pilot F. Lothrop Ames for sport use.

Frank C. Crowley of the Photographic Air Service has been giving some illustrated talks before boys' schools about Boston the past week or two. One youngster asked him, "What do you do when your motor stops?" Another boy spoke up, "Gets out and cranks it, you dumb-bell."

Plans for an air meet at Boston the first or second week in June are taking shape. Army and Navy cooperation has been promised. The Connecticut National Guard and regular Army and Navy flyers from other stations besides Boston will be asked to participate. Various cups and trophies have been offered. The meet is being promoted by the Aviation Department of the Boston Evening Transcript which staged the Boston Air Show of last December. The Municipal Air Board, the National Aeronautic Association, and the New England Reserve Air Service Association have become active in the work. Details are to be announced in the next issue of Afro Digest

The New England airways system of the future can be envisioned from the list of emergency fields already charted by the Army. In Maine there are 26, in New Hampshire 2, and in Vermont 23, in Connecticut 17, in Rhode Island 12, and in Massachusetts 70. General Patrick plans to extend the regular Army Airways to Boston by 1927. And New England flying men plan by that time to have in operation a New England airway based largely upon these charted fields.





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#### LINCOLN HAS NEW LANDING FIELD

RECENT purchase by the Lincoln Standard Aircraft Company of Lincoln, Nebraska, of 80 acres, south of the city of Lincoln, insures one of the finest landing fields in the Middle West. There is a move on at the present time through the cooperation of the Lincoln Standard Aircraft Company and the Lincoln Chamber of Commerce to make this a municipal proposition.

The field is located one mile south of the State Penitentiary, which is located at the southwest corner of the city. The field will be marked with flood lights for night flying.

#### THE STINSON AIRPLANE SYNDICATE

THE successful performance of the "Stinson-Detroiter" cabin airplane gives Detroit a complete airplane market with three types of planes to cover the field. In the heavy-duty transport class is the Stout metal airplane, manufactured by Ford; in the smaller class comes the "Stinson-Detroiter," which will soon be placed in production, and in the three-passenger class is the Buhl-Verville Airster, manufactured by the Buhl-Verville Airplane Company.

The "Stinson-Detroiter" was built by the Stinson Airplane Syndicate, with offices at 439 Congress Street West, Detroit, Mich. The syndicate is now being turned into a corporation for the production of the plane. Included in the syndicate are: Edward S.



Canuck JNs arriving at the scene of the gold rush in Northern Ontario, Canada.

Evans, Alex Dow, Charles T. Bush, George E. Buchanan, Frank E. Bogart, Sr., George W. Carter, T. F. Ferguson, James M. Evans, Harry R. Graham, Guy S. Greene, Henry E. Hund, Frank H. Joyce, J. K. Livingston, John L. Lovett, Thomas S. Merrill, Wm. E. Metzger, Honorable John W. Smith, Luther D. Thomas, Bruce H. Wark, DuBois Young, Arthur W. Winter, Joseph T. Blythe, George M. Slocum, Richard Fitz-Gerald and Major Reed Chambers.

#### FLYING FOR GOLD

M ODERN invention adds to the romance of the "gold rush." Old prospectors, sourdough veterans of many a stampede, who "mushed" over the long and hazardous winter trail into the Red Lake district of Northern Ontario, scene of the latest gold strike, stand aghast these days as they see their more up-to-date rivals in the race for fortune arrive in security and comparative comfort by airplane.

From Hudson, a point on the northern transcontinental line of the Canadian National Railways, the thin ribbon of trail runs north 150 miles into the Red Lake region. Hundreds of prospectors have hit the trail from Hudson this winter, carrying their outfits in by dog team. So great was the stampede over the trail that dogs were at a premium and real huskies sold as high as \$200 each.

Recently an enterprising Canadian brought two airplanes to Hudson and started a passenger service to the gold fields. This is the first time the airplane has been used in a gold stampede. The journey to Red Lake, which took from six to twelve days over the trail, is now being made in less than two hours. In the picture the primitive and modern transportation facilities of the gold camp have met-airplane and huskie team.

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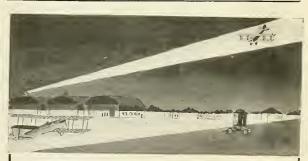
Flyers, up to \$500.

The Sweeney System
is divided into two parts. First: You are thoroughly taught in the ground school. This fits you as an ariation mechanic. You can build your own plane and do anything required in ariation mechanics and construction and repairing when you have finished this work. You are thoroughly taught motors, etc., and work with thousands of dollars worth of new material, and all types of engines. worth of new material, and all types of engines. Seeondly: After completing this work if you want to be a pilot you take ten hours of flying. Now when you understand that two to seven hours is you will any experiment of the pilot of the pi

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B. B. T. lights are now available for use on municipal airports and all commercial

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#### AIR TRANSPORTATION

A T the Air Transportation Conference held in Philadelphia on March 16, under the auspices of the Engineers' Club, the foremost authorities on this subject assured us of the rapid development of air commerce in the near future.

Major General Sir Sefton Brancker, Director of Civil Aviation in the British Air Ministry, told of a great dirigible air route half way around the globe—from Canada to England, thence to Karachi, the great military base of Britain's mandate in Northern India, and from there by way of Ceylon to Australia.

C. M. Keys, president of the Curtiss Aeroplane & Motor Corporation, spoke on "The Present and Future of American and Foreign Air Service," and in the course of his address on the past and present of the American air service, launched a telling dart into the heart of the Federal air program.

"The development of the air service of the United States Army and Navy has in the past received no substantial backing." he charged. "The 'powers that be' have not promoted it whole-heartedly. In spite of that fact, however, the two services have pushed forward honestly and fearlessly and have made substantial progress."

In "flying service," as distinguished from a great, organized system, he said that the United States never has been and never will be less than the equal of any nation in the world, due largely to the initiative, the fearlessness and the technical excellence of the more than five hundred operators in this

He paid a tribute in passing to the activities of those private individuals of corporations who in spite of lack of government support are risking their wealth and their energy in establishing air lines.

"Last year," he said, "a calculation of about one-fourth of the operators having flying service in the United States showed that there were 177 operators; that last year they made 133,467 flights for a grand total of 3,045,000 miles."

William B. Stout, of the Air Line Division of the Ford Motor Company, spoke on 'Heavier-than-air Craft."

Col. Paul Henderson, General Manager of the National Air Transport, Inc., discussed the proper arrangement of landing fields, beacons and accessories necessary for a large air transport service.

Captain George W. Steele of the Naval Air Station at Lakehurst, N. J., mapped out a dirigible air route from New York to Chicago and San Francisco and then spanning the Pacific to Hawaii, Guam and Manila, thus linking up the U. S. territorial possessions.

Charles C. Gove, deputy assistant postmaster general, who represented his chief Harry New, at the discussion, said that within a few years mail clerks will calmly go about their business of sorting mail in airplanes traveling by day and night at the rate of more than 100 miles an hour. Other speakers of the evening included Hollinshead N. Taylor, vice-president of the Philadelphia Chamber of Commerce, who is cooperating in the arrangements for the air exhibit to be held this summer in connection with the Sesquicentennial; and Major Howard F. Wehrle, who will conduct the National Air Races in Philadelphia.

#### AIRCRAFT CORP'N OF AMERICA

THE Aircraft Corporation of America was formed several months ago to manufacture and market planes of different types in large quantities, at prices within the reach of the average purchaser. Special attention was paid to the development of the amphibian airplane.

John H. Stelling, president of the corporation, has, for the last two years, developed several models of amphibian airplanes in conjunction with Lieutenant George R. Pond, the well-known U. S. N. test flyer, vice-president of the corporation, and in charge of the technical department. A series of other improved models is now being built by the Sikorsky Manufacturing Corporation, at Westbury, L. I.

Among the stockholders and directors are: Harry B. Plant, Harland B. Cushman, Alfred Van Horn, James B. Taylor, Dr. Menas S. Gregory, James B. Martin, C. B. Houghton, who is in charge of the business management of the corporation, S. E. Summerfield and Harmon S. August.

The corporation has its present headquar-



Interior view of the RB2 Transport plane as flown with Essex coach, office equipment and eight men.

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ters in the Steinway Building, New York City, and is starting an active sales campaign on its amphibian and the Sikorsky Messenger, for which the corporation is the general distributor. The Sikorsky Messenger is powered with the new Rickenbacker five-cylinder, radial, air-cooled engine. It will carry two people with speed and comfort at a cost per mile of less than the average automobile.

All experimental work has been completed, and the factory is now engaged on production contracts. It is expected that deliveries will begin in May.

#### M. A. F. CONTEST

THE fourth annual Miniature Aircraft Flyers' Tournament is scheduled for May 8 in the Municipal Pier Auditorium, Chicago. It will continue throughout the day, and 500 contestants with about 10,000 planes are expected. Last year there were 350 participants with 500 aircraft.

Others are invited to compete in any event of this indoor flying—scores to be exchanged by radio, phone, telegraph or letter.

#### SIKORSKY CORP'N HAS BUSY YEAR

THE Sikorsky Manufacturing Corporation have had a real spring rush of business. On March 15th they dispatched their big twin-motored S-29-A from New York to Atlanta, Georgia, with an important cargo of French gowns from R. H. Macy & Co, to an Atlanta department store.

They have also signed a contract to build a number of twin-motored amphibians for the Aircraft Corporation of America and just as we go to press we are advised that they have sold a three-motored transport which will be completed the early part of May.

#### CRAMER FLYING SERV.

THE Pennsylvania State Association of County Fairs, at a meeting held recently in Pittsburgh, booked their acts for the coming agricultural expositions. Among these was the flying act of the Cramer Flying Service, Clarion, Pa., represented by Russell J. Brinkley.

William H. Cramer is the present manager of Clarion field in the absence of Parker D. Cramer, who is at present in Florida in the aerial advertising business.

#### CHICAGO - ST. LOUIS AIR MAIL ROUTE

REGULAR Air Mail Service will be established between Chicago and St. Louis via Peoria and Springfield, Illinois, on April 15 by the Robertson Aircraft Corporation of Anglum, Missouri.

The length of the route is 278 miles each way. The service will be operated on a schedule making connection at Chicago with the overnight air mail service in each direction between New York and Chicago, thus placing in St. Louis at 9:15 each morning letters leaving the New York flying field at 9:40 the preceding evening. East bound, let-

ters catching a plane at St. Louis at 4 p. m. will be delivered on the first carrier run in New York the following day.

### EUROPEAN AIR TRAVEL INFORMATION

A IR travel plays such an important rôle in the lives of European tourists that chapters on air lines, including fares, are now included in that splendid guide for tourists, "A Satchel Guide to Europe," by William J. Rolfe, revised and enlarged by William D. Crockett, Professor of the Latin Language in Pennsylvania State College.

Mr. Crocket also includes aeronautical books and magazines in his list for tourists' information.

#### COBHAM WINS SECOND BRITANNIA TROPHY

WHILE making the sensational dash from Capetown to Cairo, (described on page 196) the Royal Aero Club awarded the Britannia Trophy, for most meritorious performance by a British airman during the year, to Mr. Cobham for his 17,000-mile flight to Rangoon and back, carrying Air Vice-Marshal Sir Sefton Brancker.

Mr. Cobham started from London on this great flight on November 20, 1924, and arrived back on March 17, 1925. His total flying time was 210 hours. He gained the trophy previously in 1923 by an aerial tour of 12,000 mile through Europe, Northern Africa, and Spain.

#### DOPES

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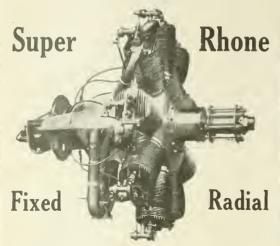
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#### WILL THE PUBLIC PAY

(Concluded from page 189)

total of \$1.20 as the cost of complete telegraphic communication. 336 per cent more is paid for the cheapest telephone rate as compared to the cheapest telegraph rate. (Chart E)

The greatest commercially operated air line in the world is the United States Air Mail Service between New York and San Francisco. The actual flying time required to make this trip is 32 hours and 50 minutes. The actual running time of transcontinental trains is 83 hours and 50 minutes. Twenty-four cents per ounce



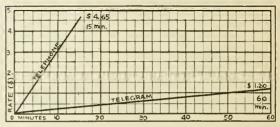
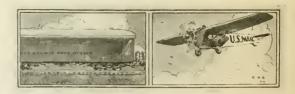


Chart E.—Comparison of cost and time of two 10-word telegrams and a 3-minute telephone call between New York and Chicago. 336% more is paid for the telephone call saving 75% in time over the telegrams.

is the rate charged by air mail, and 2 cents per ounce by regular mail service. In other words, 1100 per cent more is paid for a time saving of 68.8 per cent by air transit. (Chart F)

These few comparisons very briefly cover the changes in transportation costs in this country for over a century. Brief as they are, they tell of repeated successful struggles for newer and faster methods of transportation. Time answered the question "Will the public pay the price?" It will answer it again.



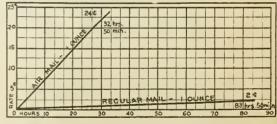


Chart F.—Cost and time comparison of rail transit (actual traveling time) and air transit of mail between New York and San Francisco (actual flying time). 1100% more is paid for mail transit by air for a time saving of 60.8%.

#### WHITEWASH IN THE AIR

(Concluded from page 184)

right kind of a report, made by the President's handpicked committee, at the suggestion of the Secretaries of War and Navy, would, if made public at the right time, distract, confuse and confound the press and the minds of the public.

The President appointed his own Investigating Committee, known as the Morrow Committee, on September 17th. The Morrow Committee completed its investigation in four weeks—time enough, however, for the purpose for which it was appointed.

The Morrow Committee examined the Secretary of War and the Secretary of the Navy, the two gentlemen who requested its appointment, and both members of the President's Cabinet. It also examined the Postmaster General and the Secretary of Commerce, also members of the President's Cabinet. It examined members of the National Advisory Committee for Aeronautics, also appointed by the President, and several others, during the four weeks of its investigation.

Its investigation completed, the Morrow Committee reported to the President and made its report public on November 30th—just a few days before the Aircraft Committee appointed by Congress filed its report.

The Aircraft Committee appointed by Congress had painstakingly taken testimony for nearly a year.

With the release of the report of the Aircraft Committee appointed by Congress, the report of the Morrow Committee appointed by the President and the news of the Mitchell court-martial, all within the week, and all bearing upon the same subject, one can readily see how distracting, confusing and confounding it was to the American public when it read its newspapers.

Read carefully the testimony taken by the Aircraft Committee appointed by Congress; consider the time spent by the President's Aircraft Board in its investigation; and you will understand the correct meaning of the word "whitewash" when applied to politics.

#### MILITARY VALUE OF AIRSHIPS

(Continued from page 191)

extremely important information was furnished by an airship, reporting the approach of a new British force from the south, which might have surprised at least part of the returning German ships without this warning.

Other important services were rendered by airships. Submarines were safeguarded in and out of the difficult approaches of the North Sea. Mine-searching and the coöperation with mine-sweeping squadrons was affected most successfully throughout the war.

A slowly moving airship is one of the most efficient means of locating submarines and mines where the sky is reasonably free of clouds and the surface of the sea is reasonably calm. It would not be an exclusive means for such purposes but can at times greatly relieve the surface craft. Airplanes by reason of their great speed have almost no chance to detect an object below the surface, whereas the airship hovering or proceeding at leisure can look down into the depths.

Countless mines and mine fields were reported by airships, and cleared by mine-sweepers, under their protection.

(Continued on page 236)



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EST. 1860
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(Continued from page 235)

Airships stopped, searched and captured merchant vessels. The most remarkable airship feat was the journey of the L-59 in 1917 from Bulgaria to East Africa, carrying more than thirteen tons of munitions and medicines for the German colonial forces, making 4,200 miles in less than four days, establishing a still unbroken world's record. This furnishes an excellent example of the feasibility of quick movement of troops or supplies when necessary.

Small British airships flew about two and one half million miles during the last year of the war and were most efficient in anti-submarine patrol, mine searching and the escort of shipping. Indeed without these airship patrols Great Britain might have succumbed to the submarine menace, which was overcome only by a very close margin.

It is significant that the British Labor Government authorized heavy subsidies for the further development of large airships, including the two five million cu. ft. ships now under construction.

It is true that certain tasks performed by rigid airships during the World War may be done hereafter more effectively and economically by airplanes and small airships. But the present efficient limit of even the airplane operations is about 500 miles off shore.

So much for the past. What about the present and future possibilities?

In view of recent and future developments the conclusion is unavoidable that the large rigid airship will be of enormous importance to naval operations especially for long range scouting, and is justly entitled to be ranked in the first line of defense.

Without going into construction details, ships capable of making the performance outlined in the following discussion would be in sizes of six million to ten million cu. ft. Such ships could safely operate over distances of 5000 to 10,000 miles, depending on the military load, which latter would always include some airplanes. These ships would have a speed of about 90 m.p.h., about half of that of the fastest service airplanes and three times that of the surface fleet.

The military qualifications of such an airship are often judged by its vulnerability, and in this regard many mistaken ideas prevail, based largely on the fact that the hydrogen-filled airships used in the World War were vulnerable to incendiary projectiles.

In fact the only real danger to a hydrogen airship arose from its inflammability when hit by even the smallest incendiary bullet, and not at all from the ease with which a projectile could penetrate the structure. It is a fact, proved by many instances, that a Zeppelin airship can be riddled with bullet-holes, large and small, many more than might normally be expected during a combat without being forced out of action. Its bulkhead system, dividing the gas into compartments more elaborate and efficient than that of most steamers, gives great margin of safety—and repairs can be made immediately.

The future design of American military airships would include helium protection, a feature which, with good handling, would make the ship safe against almost any kind of attack.

Safety against fire ranks first among the modern improvements from the military point of view.

The next important feature is the fact that the airship will carry fighting airplanes for its own protection. The problem of releasing and taking on airplanes from the airship, in day or night and under almost any conditions of weather, can be considered solved. And since there will be no need for an elaborate undercarriage for airplanes it can be taken for granted that these planes will be superior to land or seaplanes in fighting strength. It is doubtful whether an airship will ever be subject to a dangerous attack from enemy airplanes.

The third important improvement is the defensive armament of light artillery and machine guns which airships will carry. If the airship's own fighting airplanes should not be able to keep enemy planes away, its batteries of guns of substantial calibre will make it normally impossible for them to get within effective range.

One conception of airplane attack against an airship is that the airplane could easily drop bombs on it from a higher altitude. However airships climbed to altitudes of 24,000 feet in the late war and could go much higher today if desired.

The fourth improvement is the design of the modern airship so that its strength will not be fatally impaired even if large pieces of its structural framework, outer hull or gas cells should be shattered by bombs or shells or aerial torpedoes. Further, the design ensures complete accessibility at any time to every part of the ship, especially to the gas cells, so that any damage done by enemy projectiles can be repaired immediately and the losses of buoyancy confined to a minimum.

This feature facilitating its safe return after combat a long distance from the base is more fully realized in the modern type airship than before.

Another feature highly useful in cloudy weather is the observation car, developed in 1914 and 1915 and used with great success during the World War. It consists of a structure similar to an airplane fuselage, which can be lowered on a steel cable to any desired distance below the ship and carry one or more observers. Thus the airship can stay in perfect safety completely hidden in the clouds while its movements are controlled through the telephone by the observers, several thousand feet below.

Other points which make for safety are the improved speed and climbing ability of modern designs, which can be further increased if desired by using compressor motors in higher altitudes, keeping pace with the similar development in the airplane; the possibility of noiseless machinery; and, lastly, the occasional use of smoke screens put out from accompanying airplanes below or above the airship.

The armament of a military airship for attack will include bombs—explosive bombs, incendiary bombs and possible gas bombs—against objects on land or sea, and depth-bombs against submarines. The airship can carry much heavier and more effective bombs than the airplane and over incomparably greater distances.

Its automatic guns and machine guns may be used for defense against airplanes and for attack against submarines and possibly even a destroyer. The military airship will carry fighting or pursuit airplanes for attack against enemy airplanes, and bombing planes and torpedo planes for attack on land or sea objects.

(The airship as a long distance power unit will be presented in the May issue.)

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#### "HELL'S BELLS" O'NEIL

(Continued from page 202)

a round dozen Immelman's. Then he flies half way across the 'drome on his back. Then he goes in for fancy spinning and dives with his engine full on. Then he spends a half hour on stalls and slips. Next he roars across the 'drome making three bounce-landings and off again. They said afterwards that he looped inside of C Flight hangar and flew through the Sergeant's Mess but I think they're a bunch of liars. Anyway the last I see of him, he's doing a falling-leaf from six thousand down.

"About noon his gas gives out and the mourners begin to gather with broad grins. They've woke up the medico and got a stretcher ready and there they are, standing on the tarmac in pajamas and bathrobes. Some of them have on one boot and one slipper. Others are wearing stocking caps, and once more the place looks like a flying-man's hang-out.

"Down comes 'Red' for a three-point landing, and in he taxies. The grins broaden. The bus stops, 'Red' hops out. Well you could of knocked me down with a feather. There sits the Adjutant smiling. 'What's the matter?' he yells. 'Let's have some more!'

"'Red' gasps. We all gasp.

"'Come on!' yells the Adjutant. 'More!'

"'Not by me,' says 'Red.' 'I'm done for the day.' "'Aw, come on,' says the Adjutant, almost on the

verge of tears. 'Somebody take me up.'
"To finish it," says Hell's Bells, "that bird soloed in four days and goes away to a training camp for his wings. A month later two guys drive up in a tender and stop at the mess. One of them is in nice shiny boots with brass buttons and a lot of signs on his cap and collar that say he's a soldier in some man's army. The other is dressed sort of comfortable and tramp-like. He has wings. He's our old Adjutant. I says to him, 'who's this guy with you?' He says to me, 'Some Adjutant bloke, you know. They sent him along with me, you know. Just throw him in the wastepaper basket. How's "Red"?"

"Speaking of people who hang around war-time aerodromes and can't fly no more than the aunt of a retired quartermaster general on sick leave-I'll tell you one about a major's bathtub and a pair of spurs." (In May.)

#### AIR - HOT AND OTHERWISE

(Continued from page 190)

trol the thought of the American public that the "Wise Ones" will not be disturbed in their comfortable places. And does it work? Very likely. Prop, Ag and Anda are powerful in debate.

If you don't believe me when I say this consider the unquestionably honorable James Wadsworth, Senator

from the Sovereign Empire State.

January 30th, 1920, in discussing Senate Bill 3348, providing for a Separate Air Force, and favorably reported from the Senate Committee of which he was and still is the chairman, he answered Senator Hitchcock's query as to whether or not this created a third department:

"It does, and if we do not do it this year we will do it next and if not then the year after. It is unavoidable." (See Congressional Record, volume 59, page 3, 66th Congress, second session, page 2246). He added, "... I am confident that military emergencies in the future will be characterized in their second or third day by some great air battle, and it may be two or three thousand miles off the coast.

"A combatant force trained for that purpose eventually will become part of our national defense. . . . It is inevitable, just as it was to organize a separate War Department following the old department which controlled both Army and Navy."

That was before Prop, Ag and Anda had been sent out by the "Wise Ones" to sway all Congressional opinion with regard to Air, and had changed Senator Wadsworth's mind.

Now Senator Wadsworth solemnly declares, and oh, my brothers, it is to laugh:

"The man who can seize and hold the surface of the earth (and he meant the Army) is the conqueror." This he said at Birmingham, Alabama, in 1926 talking before a convention of the "Dekes" fraternity. "It is well to remember this when talking about the national defense and estimate the wisdom or unwisdom of revolutionizing its machinery."

That is, when we consider putting our flyers under the direction of men who know what flying is instead of those who know nothing about aviation, are incompetent to deal with it, and men who, anxious to get all the Government money for their own familiar associates and the old fighting methods, are afraid of the new art and therefore hate it.

He thrillingly asserted that he would like to see the purchase of more planes, but added, in solemn warning:

"The designers are registering tremendous improvements in every way and therefore we should hesitate before we purchase a large number of planes in any one year, lest we find that we have committed ourselves to the extent of our financial abilities to a type doomed to be outclassed."

We scrap ships each year because new and better ones have been devised. We change rifles for the army every year or two because new and better ones have been invented. But as concerns the air we mustn't do a thing until inventors stop inventing for fear replacement may be necessary! Now compare the cost of replacement,—new planes \$10,000 each, new battleships \$25,000,000 to \$50,000,000. One more laugh.

And not another word about the Separate Air Service. In the time between the good Senator's two

(Continued on next page)



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Send for 1926 Aviation Catalog

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#### (Continued from preceding page)

utterances Prop had been at him from the Infantry. Ag had been at him from the Calvary. Anda had been at him from the Artillery.

"I am a friend of the Air Service," he said, which reminds me of a murderer near Batavia. New York (the Senator's own State) many years ago. Having beaten his wife's brains out with a boot he stood over her as the sheriff's men approached, and when they paused to gaze at him with aghast surprise (no more aghast than that with which I watch the honorable Senator) they heard him murmer: "God Almighty, how I loved that woman!"

The Senator, before Prop, Ag and Anda started to work, said: "Whatever emergencies we shall meet in the future will be characterized on the first or second day by some great air battle and it may be a thousand

or two thousand miles off our coast."

But now he says: "This should cause us to hesitate before we purchase a very large number of planes in any one year."

The Senator should read Loisette, who once devised a really good memory system.

Everyone has always known that navies could not win a war alone and that armies could not win a war alone, yet we separate them because their technical trainings and all other special interests are widely different, for they operate on different elements. The difference between air fighting, and land fighting or water fighting is as great as that between those two.

And there is another matter even of more moment. Armies cannot attack navies or navies armies. Air forces can attack either or both at will, and will do so in future wars.

The national safety is the thing we are all after.

So brethren of the sea and brethren of the land, forget your selfish interests and disregard the occupants of the departmental arm-chairs (if you have sufficient nerve) long enough to think about the real defense of the United States.

Why should you wish to kick your little air sister in the face?

Encourage the charming, promising child, stop punching her, for, take my word, she's growing in the public mind and heart and presently, despite the work of Prop, Ag, and Anda she will be in a position to drop a bomb on you, and then-well-who can tell? It might make a hit and sink you.

#### OPERATION OF THE AIR MAIL LINES

(Continued from page 187)

which railroads do.

An airway can be so prepared and lighted as to insure just as safe and regular operation as exists in any method of transportation today, and the cost would only be about ten per cent of what it costs to build a singletrack railroad.

#### COMMERCIAL DESIGN PROBLEMS

In laying out a satisfactory commercial design, the requirements of the service in which the planes are to be used must be very accurately determined, the operation and maintenance problems must be carefully studied, and the design and material specifications made accordingly. The successful commercial operators will be the ones whose planes fit the service, and not those who attempt to fit the service to their planes.

It is essential that new engines be used in both military and commercial operations if aviation is to have normal development in this country. The fact that more than ninety per cent of all the airplanes in the United States are equipped with engines that were designed prior to 1918 would seem to indicate the urgent need of using new engines in our aviation program.

Future commercial airplanes will use engines of larger horsepower as the larger engine does not cost as much per horsepower. The maintenance cost in service by mechanics is practically the same as for a smaller engine. The pilot's pay is the same. The cost of fuel and oil for a 400 Liberty engine in mail planes is 6.78 cents per mile, a small item as compared to the total cost of operation which is about a dollar per mile in the government service.

With an 800 h. p. engine it is possible to design a commercial plane that will carry a ton of cargo at a cruising speed in excess of 100 m. p. h., using only 65 per cent of the rated h. p. of the engine, thereby insuring the reliability and long life of the engine. A large percentage of the mechanical difficulties which we now encounter will eliminate themselves when planes are designed to ordinarily use only a reasonable portion of the available h. p. of the engine and have ample surplus in reserve for emergencies. How long would you expect your automobile engine to last if you ran it full throttle or near full throttle all the time?

Prospective commercial operators should not be concerned about the cost of Government operation or the deliberate action of the Government in providing modern and safer flying equipment, as these things come slowly on account of existing Government regulations which were made before aviation came into existence. Competitive bidding in securing airplane supplies and materials is a serious drawback to the progress of Government aviation, and it is very costly, as a large percentage of the materials thus secured are not the most suitable for airplane work, and add to the hazards of operation. I mention these things merely as advantages to the commercial operator who is not so encumbered and who is free to select experienced personnel to build an organization.

Commercial operation will be much more economical than Government operation. In fact one of the large commercial companies has already published statistics which indicate their operation costs as less than fifty per cent of Government operation, even though they are using a more expensive ship to operate per mile cost. With modern equipment and an efficient business organization, airplanes equipped with engines up to one thousand h. p. and carrying a ton of cargo at speeds from 90 to 110 m. p. h. can be operated for about fifty cents per mile. This estimate, however, does not include the cost of a lighted airway between terminal fields.

Development of suitable airways for commercial operation is one of the most comprehensive problems of the immediate future and pending legislation will doubtless do considerable toward solving this problem, probably with the Government maintaining lighted airways as they do lighthouse service along the coast.

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#### BOOK REVIEWS



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Formerly Principal of University College, Exeter.

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It describes the various cloud forms, their birth, growth and dispersion, classifies them according to the accepted code of the International Meteorological Conference (Munich, 1891), and introduces further classifications to describe the various cloud forms within a type. It also gives clear, definite and simple instructions for computation of altitude and for cloud-photography.

#### THE GERMAN AIR RAIDS ON GREAT BRITAIN, 1914-1918

By Captain Joseph Morris, B.A. (Cantab), A.F.R.Ae.S. (late R.A.F.)

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**MAY 1926** 

25 CENTS

# AFRO DIGEST



DANGERS of the ARCTIC
By Capt. F. E. Kleinschmidt

POLAR PASSIONS

By Cy Caldwell

TWISTED IDEAS

By Corley McDarment

## A MESSAGE TO AEROPLANE MANUFACTURERS



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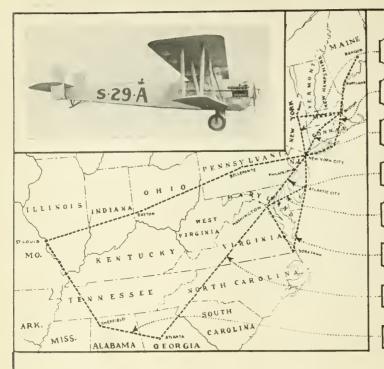
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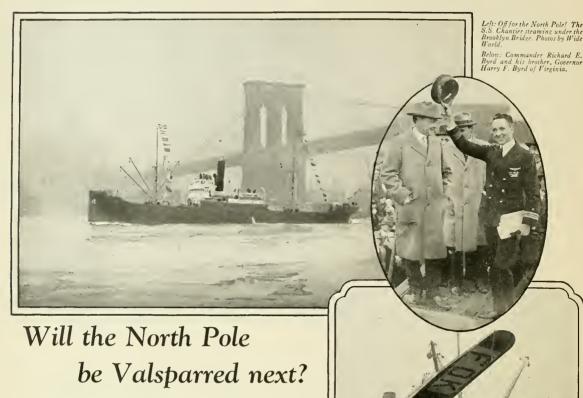
"Having had such wonderful service from your Curtiss-Reed propellers, not to mention increased performance, we feel it our duty to offer you conclusive evidence showing the extremely severe conditions under which these propellers are operating. They are still in excellent condition."

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The Curtiss Aeroplane and Motor Co., Inc. Clinton Road, Garden City, N. Y.						
Gentlemen:						
Without obligation to me please quote prices and delivery on Curtiss-Reed Propellers for the following installation:						
Name of Ship						
Motor Model H.P R.P.M. (full throttle, level flight)						
Diameter of propeller now used Pitch						
If geared, state gear ratio						
Actual high speed with present propeller						
Maximum possible diameter for new propeller (State the maximum diameter you can swing and still have proper ground clearance).						
Name and address.						



Mid a blare of whistles, the good ship *Chantier* set sail recently for Spitzbergen, carrying Commander R. E. Byrd and his band of intrepid explorers on the first leg of their journey to the North Pole.

Placing his entire confidence in a heavier-than-air machine, Commander Byrd selected the Fokker Airliner powered by three Wright Whirlwind Engines, to carry him over the Polar Regions. Under the extreme conditions which this ship is likely to meet in the frozen North, the weatherproofing and finishing of the plane plays a most important part.

It is interesting to note in this connection that the wings, fuselage and tail surfaces of the Airliner are Valsparred—sufficient indication of what Commander Byrd and the Fokker Company think of Valspar!







Left: Chosen for two Polar Expeditions! The Fokker Airliners to be used by Commander Byrd and Captain George H. Wilkins in their respective polar flights are Valsparred, of course!

# AIERO DIGEST

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"Across it all 'as the crow flies' flies the airman, intensely uplifted in spirit as there breaks constantly upon his views the varying scenes that lie beneath the air lanes." (See page 258).

etc., and can I make money

It was just as hard to

## TWISTED IDEAS

HE following is a sample of scores of letters received in Air Service Head-

Bythat have recently been Lieut. Corley McDarment

tell people everything about steamboats and railroads when these two means of travel were getting on their own as it is to tell of aviation today—perhaps harder. People who know nothing of aviation, however, do not realize how much they need to know before going into it. The sight of a small

out of it?"

of these letters, from the character shown in the signature, from the neat crispness of the stationery and the correct taste of letterheads, a reader is impressed with the sincere businesslike attempts of the writers to take a hand in the fascinating art of aviation. But there is nobody in the world who can answer a letter like this one quoted, in full:

quarters at Washington. And from the tone of most

trim scout airplane whining steadily across an evening sky, awakens visions in the lay mind of fanciful pos-The visions of flight, unfortunately, do not include

"The Chief of Air Service, Washington, D. C. Dear Sir:

the hours of bolt tightening, carbon cleaning, gas straining, wire tightening, oil wiping, etc. that form the less pleasant part of flying, nor the hours of training in which a slip of the wrist may mean disaster. Flying is much like doing the Charleston-it looks easy, and one is apt to overlook the hours spent with a lone phonograph, the severe leg twisting while the hands rest on the back of a chair, and the knee liniments that go into the finished product.

"I am very much interested in aviation. I would like to get into commercial flying for I feel it has a future. Can you give me any information on the possibilities of the matter and also some of the specific things necessary to start a business. I have some capital to start with.

> Some of the communication received at aviation headquarters in Washington reveal attitudes somewhat different from the writer of the first letter quoted. One letter received not long ago by the Army Air Service showed a distinct attempt to render material aid to aviation, both commercial and military, by the sale of a

"Very truly yours,

cost—only twice the regular value of the land thereabout. This letter went something like this: "My farm would make a fine lighting place for airplanes, airships, balloons and gliders. There are plenty of tall shade trees with a nice rolling open space between them. The open place would do for the airplanes to light and the aviators could tie their machines up under the trees and rest. The farm is well watered. In fact a nice creek runs right across the open lot where the planes could land. And the grass is tall on the landing lot so the machines will hit easy. I should also say that if you visit the place by airplane, watch out for some hidden stumps in the right hand corner of the field. There are also two stumps near the middle but as they are not set very close together,

flying field at a very modest

It is unfortunate that nothing very definite can be furnished to people who are really interested in developing commercial aviation. But a dichotomous division was never so marked as that between people who under-

stand aviation and those who do not. To attempt a written answer explaining the possibilities, limitations and cost of starting a flying company would be absurd, yet every day the officials of the Army, Navy and Post Office Departments are called upon to reveal the facts by a "yes" or "no" letter. These requests, coming from people who are just beginning to get interested, show a definite trend of public opinion. It was true when railroads and steamboats started operating. Years ago, letters came into the Government Departments at Washington from people asking: "I am interested in starting a steamboat line, how must I do it?" And, "I believe there may be something in this railroad business that is starting up, and I'd like to get in on it. Please tell me all the possibilities, costs,



"I am very much interested in aviation."

there is not much chance of hitting them. If you did hit them it would be by accident. And how big must a stump be to hurt an airplane? Please let me know if you are going to visit me by air and how much the Government will pay for the nice place."

Thus far no aviators have really had the time to visit the gentleman's farm and check up on his statements as to the water and shade trees or even to verify the exact locations of the stumps. The farmer no doubt thinks the Government officials are not appreciative of his efforts. A gentle letter was written him, however, explaining that the Air Service was pretty well stocked with trees, stumps and running creeks around flying fields, and that right at the present time, the corps of experts had decided, amid weeping sessions, that additional purchases such as offered, could not be made.

It is characteristic of official correspondence that plain "yes" and "no" answers are scarce. This is very true in answering aviation inquiries. Consider the answer above, for example; the farmer gets an idea that whenever the committee dries its tears and thinks the matter over carefully, it will reconsider the findings and probably send an official with orders to buy the farm.

Ouite frequently, the President of the United States gets aviation queries from citizens direct. The letters are sent to him evidently on the theory that as he is in charge of all the Government Departments, he must necessarily be versed in the various jobs beneath him. The President has been asked how to make airplanes, balloons, kites and gliders, and how to fly them after they are made. It will be a shock to learn that the President, instead of sitting down and writing out the method of procedure in building an airship or airplane from the skin on, when an honest voter has asked him to do it, merely turns the letter over to a secretary. who turns it over to the Secretary of War, who turns it over to the Chief of Staff, who makes a study of the matter through one of the "G" Divisions, who then thoughtfully refers the correspondence, lock, stock and barrel, over to the Chief of Air Service, and there

somebody must let the cat out of the sack and reveal the secret of airplane or airship building.

The fact that the writers of letters like this seldom specify the exact kind of airplane or airship they want to build, makes it a trifle hard on the Lieutenant w h o does the actual answering of the letters. Especially is it hard when the writer does not quite know himself exactly what kind of a craft his heart desires for sky traveling—often it is just "a" airplane that he wants to build.

The following shows the state of mind held by at least one red blooded American, with the interest of aviation at heart:

"Dear Mr. Cool Idge, President,

"I want to build a bloon. I want to first build a one man bloon and if it works all right I will build one that will carry up several people like the Army and Navy bloons. After I get through building the bloons, I want to make an airplane, a small one at first and then a bigger one. I want to carry the mail in it. Please send me instructions on how to build both the bloons and airplanes. Right away please."

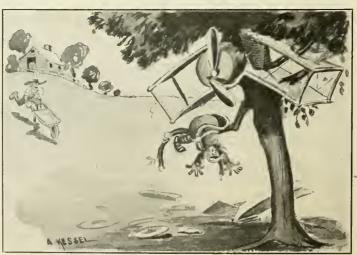
The President of the United States does not spend much time in answering letters like the above on the manufacture of balloons and airplanes, but passes the letter along down the grooves mentioned earlier where it finally lands with some working member of an office and is answered.

From a study of aviation as a whole in the United States, it is apparent that commercial success with air lines cannot be based upon reports derived from military experience. Military aviation is doing much toward laying out and charting landing fields through the country, and at present 3,608 landing fields have been listed. Of this number 2,782 are emergency fields and the rest are listed under Army, Navy, Air Mail, Municipal, Commercial, etc. and are in actual operation of some kind.

The reason that commercial success cannot be predicted by military aviation is because of the extra hazardous planes flown by the Army especially. It is getting to where the Army aviators consider themselves lucky if they go out on a cross-country trip and do not have a forced landing. One of the biggest mistakes ever made in aviation has been the attempt to make commercial flying a success with military flying equipment. This was and is true in Europe as well as in the United States and the rest of the world. But it was

one way to dispose of the War equipment. This is unfortunate as it gave commercial flying a black eye from which it has not recovered entirely.

Military airplanes go into tail spins or nose dives if a pilot looks around for a moment and they often go into spins and dives while the pilot is watching them. This should not and cannot be done if commercial (Concluded on page 309)



"My farm would make a fine lighting place for airplanes."



BENEATH a fluttering banner portraying the American eagle perched on top of the world, Lieut. Commander Richard E. Byrd and the forty-seven volunteers accompanying him started northward.

With the advance of spring, Commander Byrd hastened his departure in order to make his flights before the mists and fogs make more difficult the accomplishment of his purpose.

Brave men, these! Facing unknown perils to further the cause of science. Daring the uncertainties of arctic flying

to prove the value of aeronautics in another field—as a means of unlocking the untold secrets of the frozen north. Flying confidently under their symbol of success, no ship ever carried a more enthusiastic company than the Chautier. The spirit of adventure and patriotism filled leader as well as mess-boy.

With Commander Byrd, who is a profound student and inventor of many air navigation instruments, are the following experts: Floyd Bennett, pilot-mechanic; Lieut. G. O. Noville, of the Vacuum Oil Company, flight and fuel engineer; reserve pilot. R. C.



Lt. Commander R. E. Byrd.

Ortel; mechanic, L. M. Peterson and T. H. Kincaid, engine expert from the Wright Aeronautical Corporation.

The Chantier is bound first for Tromsö, Norway, which was Andrée's base in his attempt to reach the Pole by balloon in 1897. There an ice pilot will join them to take the ship through the icebergs to King's Bay, Spitzbergen. The first flight, to carry food and supplies, will start from Spitzbergen to Peary Land, 400 miles distant, the northernmost known land in the world. They will then fly back to Spitzbergen

and take another load to the Peary Land base, after which the attempt will be made to fly the 450 miles to the North Pole.

Their objective is not primarily to reach the Pole but to make a survey of the unexplored area surrounding it. The flying equipment of this expedition

consists of the Fokker type F VIII, equipped with three Wright J-4 200 h.p. air-cooled engines, which will make the main flight, and a Curtiss Oriole, which is to be used as an auxiliary.

The Fokker wing measures 63 feet 3 (Concluded on page 318)



World Wide Photo.

serve pilot, R. C. Lieut. Commander Byrd, Lieut. G. O. Noville and Pilot Floyd Bennett.



but I propose to keep both feet on the ground."

So you hear a lot of Ameri-

cans, nowadays; men of business too, who have made a success in their lines. They have always lived on the ground, and they propose to stay there.

And what a lot they are missing! I wish I could tell them just what that prosaic resolve of theirs is costing them, but I am only an humble newspaper man with a vocabulary falling far short of the late Woodrow Wilson's 60,000 words, and I cannot project the pictures that I cherish in the background of my mind. But having had my hundred hours in the air, and then some, I know that they have missed A LOT.

Why shut so much out of your life, you dollar-chasing business man? Perhaps you think you are chasing more than dollars—perhaps scenery and pictures and music and sculpture have their appeal for you.

But to enjoy scenery, you often travel half way across the continent to find it, when you have it any-

where if you will go 5,000 feet into the air and look down upon it.

As to pictures, you will nowhere find a picture that will match the autumn-emblazoned forests of the Alleghenies as you may see them, miles on miles, from an airplane on an October afternoon.

In music, you will hear nothing so thrilling as the singing of the

## By Ralph Cram

Governor of the N. A. A. for Iowa Photographs, courtesy of the U. S. Army Air Service wires as you throttle down your motor and glide to your landing field or into the quiet harbor where the seaplanes lie.

And nothing I have ever seen in sculpture ranks in my memory with the looming beauty of the big hangar out at Scott field as a pilot

who must have had an eye for beauty, too, banked our ship in a wide circle preliminary to landing, last summer.

#### EVEN THE PRAIRIES HAVE THEIR CHARM

Even the flat prairies of our Middle West become a panorama of ever-sustained interest and charm as they pass rapidly beneath the flyer, with their succession of cities and towns, rivers and lakes, their drainage districts, the farmsteads with their windbreaks tapering into the northwest, roads often running for miles straight toward each major point of the compass. Here and there the lowlands of a meandering river, green with trees and the grasses of an untilled land, break into the monotony, or a bit of rough land diverts the

ground traveler from his straight course. Across it all "as the crow flies" flies the airman, intensely uplifted in spirit (unless it's an old story) as there breaks constantly upon his views the varying scenes that lie beneath the air lanes.

#### LET THE PILOT WORRY

And all the air - passenger has to do is to enjoy it. There's the



Old earth appears like Herod's dancer-half concealed by veils.



Wonderfully beautiful cloud formations over Mount Adams.

pilot, in front or behind him—if anyone has to worry, let him! The statistician will show you that for every accident to an air-traveler, other passengers are carried safely by air for millions of miles. If we shied off from that millionth chance, we would never get into an automobile. So, air travel is coming not only because the thrill of it makes it worth taking that millionthminus chance, but because in practical utility it will soon assume its rightfully predominating place among the established transportation systems of the world.

As I have said many times previously, speaking for

you, Mr. Passenger, let the pilot do the worrying. I don't think he'll get thin at it, but it's his job, not yours. Get into his ship and give him the chance. Like John Wanamaker's customer, he's always right—or nearly so. I never tried to do any of his thinking for him, but that I felt foolish later on.

#### FOLLOWING THE PLANE'S NOSE

For instance, I had been East after the 1924 air races, and was flying back from Bolling with Lieut. W. T. Atkinson, of Langley Field. The Bachelor Officers Club at Wilbur Wright Field at Fairfield made us comfortable over night, and next morning we hopped over to McCook and from there were flying to the new Ford Airport, for a call on Bill Stout.

Now it happens that Detroit

and its environs are quite a bit northeast of McCook, whereas I had it in my mind that the course was north and a bit west. The pilot had the map, and while the roads and section lines on the ground told me he was flying northeast, I would have voted that he was off his course. But soon the Detroit flats, and then the city itself, were below us to the right, and then Dearborn was right in front, and there was the field, and we were landing a few minutes after 11. We appeared in sight, Mr. Stout assured us, just at the hour when I had wired him we would be there. And it was Lieut. Atkinson's first visit to the Ford airport-in fact, we were told that he was the first Army pilot who had landed there.

The same uncanny sense of

direction seems to be possessed by most all the experienced flyers. Lieut. Harold R. Harris, I found, had it when, one summer morning after a meeting of the Governors of the N. A. A. at Dayton, he flew me from McCook Field to my home port, Wallace Field at Davenport, Iowa. He had put into his map rack a page from an atlas on which with a ruler he had drawn a straight line from Dayton to Davenport. I was speculating on how far we would be away from Davenport when we struck the Mississippi. It was new country

(Continued on page 309)



Mount Shasta reveals her towering mysteries for the aerial mountaineer.

## AIR-HOT AND OTHERWISE

RETHREN of the Air Clan (and there should in this country, allowing a mil-

Davis versus Davis be 109,000,000 of them By Frank A. Tichenor

lion off for the feeble-minded and insane) will remember the story of the shield which one knight said was golden and the other swore was silvern. Whereupon they punched each other's knightly noses.

Yet both were right.

Vellow with the precious metal was that shield upon the side from which one knight had gazed at it: like unto a dime or one of Andy Mellon's aluminum saucepans was it on the other, which the second knight had seen

Therefore I was trying to act mercifully on the Congressional Limited one recent day when I sought to calm two citizens engaged in what seemed battle to the death.

"Davis is in favor of a large Air Force," one had declared; "He has demanded it."

"He's anti anything in the American air except heat and the General Staff publicity releases—which are very much the same thing," the other had exclaimed before the death grip.

If I had only been a little quicker I might have saved the fatal clinch of the opponents which caused both to be thrust from the train as it was just about to cross the line out of total abstinence Pennsylvania into prohibition New Jersey (thanks to U. S. Senator Edwards).

For I could have shown them that one was speaking of the Mr. Davis who as Assistant Secretary of War spoke at Providence, and the other of that Mr. Davis who is now Secretary of War and as such testified in Washington.

It was the same shield which both had seen, but what a difference! It was the same Mr. Davis whom my pugilistic friends on the train saw, but what a difference after he became Secretary of War!

"Our most serious deficiency is in aircraft," said the Assistant Secretary there at Providence. "The situation in the Army Air Service is becoming . . . absolutely critical. . . . In 1922 we had a surplus of 2,125 planes; in 1923 the surplus was 764; in 1924 we have an actual shortage of planes needed for training purposes; in . . . 1926 this shortage will be increased to 1,428. . . . We will find ourselves in the appalling situation . . practically powerless in the case of an emergency.

"This is rendered more serious because it takes from 10 to 18 months to build a plane and our airplane industry . . . struggling for existence, could not possibly carry a war-load. An industry cannot be created overnight. Aircraft is absolutely essential to modern warfare. If we had to wait . . . we might be defeated before we had begun to fight. . . . Large numbers of our boys would be unnecessarily killed . . . Our physical isolation, protected by the oceans, is no longer a safe defense. A single dirigible could fly from Europe to Providence in forty hours, carrying as great a weight of bombs as were dropped on London during the war. . . .

"Are we again to shut our eyes in fatuous folly to the lessons of the past and the possibilities of the future? Who pays the cost of such blindness? . . . Every man, woman and child in the country . . . every taxpayer, every business man . . . every mother whose boy is sacrificed on the altar of unpreparedness.'

Hip, hip, hip, extremely loud applause, and—don't read ahead at once. The speech was at a public luncheon but I have written "hip, hip, hip," not "hic, hic, hic," no matter what comes afterward.

And that's one side of the shield.

Brightly burnished. The real metal. Shining with the glowing zeal of actual patriotism.

This was at the luncheon of the Town Criers at

Providence, R. I., February 18, 1924. (War Department Publicity Release, therefore Official with a capital O.)

Pure gold that side of the shield! Oh, great! What a jarring, jingling, juvenating jingo was our Assistant Secretary of War then! Three cheers and damned be any printer who makes that word read jeers!

The talk was on Industrial Mobilization as Insurance Against War. Thinking New Englanders were listening and were powerfully impressed. Why, folks, Assistant Secretary Davis had New England frothing at the mouth!

The knight who heard that speech from Mr. Davis' lips will swear till death shall seal his own forever that Mr. Assistant Secretary of War Davis is some defender of the country, some advocate of aircraft, some pumpkin for preparedness.

But hold. Years pass. Not many, for Mr. Davis is a fast worker mentally. Now he is no longer the Assistant Secretary. No; he has become Secretary. Which is different. He has risen in the world. Some do—if they understand the game of politics.

We naturally regard with greater reverence, with even more profound respect than that we gave to an Assistant Secretary's utterances, those inspired and sometimes awful noises which issue from the person of an actual Secretary. An Assistant Secretary is still human. But a full Secretary—heavens, man! Ain't he divine? At least, he's sure to think he is. He is a member of the cabinet. Only a President can be greater than an actual member of the cabinet.

And now, one day, this member of the cabinet, on whom our eyes are fixed with awed abasement, deigns to instruct the House Committee upon Military Affairs, dropping nuggets of supernal wisdom into mere congressional ears with splendid generosity.

This is January 20th, 1926, one month less than two years after Dwight Davis yodelled patriotically, as set forth above, before the Providence Town Criers.

(Continued on page 306)



THE most important service which the military airship can furnish, and one which cannot be obtained as fully by any other means is in naval scouting and patrol.

To understand the value of the airship for naval patrol, it

should be realized that the modern large rigid not only can cover distances at least seven times as great as the airplane, but that also by the proper use of airplanes from the airship the range of observation is increased at least about 10 times.

The big airship moving at 60 m. p. h. even under adverse weather conditions, which is twice as fast as any surface vessel, may be considered as a mother ship and base for fast scouting airplanes, which are constantly going off in a tangent and returning in regular intervals for relief.

With two airplanes flying on each side of its course an airship can cover effectively a strip of territory 400

to 600 miles wide at a rate of progress of 60 m. p. h., or an area of about 500 by 1,400 miles (approximately 700,000 square miles) in 24 hours under normal conditions of visibility. It can continue this without refueling for at least four days, covering in a single flight an area of 1,500 to 2,000 miles, or almost 3,000,000 square miles. Modern methods of radio direction finding and communication will assist in ensuring the reliability and the efficiency of the patrol.

For short range operations, say about 500 miles from the coast or floating base, reconnaissance over sea might be done more quickly and possibly more economically by airplanes.

But beyond this distance the plane-

## By E. A. Lehmann

Who Accompanied Dr. Hugo Eckener as Second Officer on the Transatlantic Flight of the ZR-111

to other methods?

The airplane we have already dismissed except in the field of comparatively short range reconnaissance.

carrying airship is more ef-

fective than either the airplanes

only from the standpoint of its

usefulness in reconnaissance,

how effective and how expen-

sive would it be as compared

If we consider the airship

or sea-going cruiser.

Comparing it with the cruiser, since the airship can move at twice the speed and has at least three times the range of vision, the conclusion would not be unreasonable that an airship could relieve six cruisers from long range scouting duties, making them available for other purposes.

The limiting factors of poor visibility would effect both types of ships alike and the cruiser would be further subject to uncertain conditions of the surface of the ocean.

The comparative expense of doing this reconnaissance with a single airship, costing say \$5,000,000 as against using three to six cruisers at \$25,000,000 each, points out the possibility of increasing the total strength of the fleet by adding a few comparatively inexpensive units which will relieve larger and stronger units from certain functions and enable a concentration of each type on the task for which it is best suited.

Besides airships can be quickly replaced in case of losses. During 1917-1918 the Germans were turning out airships at the rate of one every fortnight. There is no doubt that with proper organization even the largest types of the future could be built at a similar rate.

Comparing the airship as a reconnais-



Captain E. A. Lehmann.

sance unit with airplane carriers of the type of the Lexington and Saratoga, a single airship costing \$5,000,000 and having easily twice the speed would be equivalent in reconnaissance work to two airplane carriers costing \$100,000,000.

Of course, the principal function of the seaborne airplane carrier is to carry along the fighting planes for the protection of the fleet rather than for long-distance reconnaissance. It would, however, have to be used for this latter purpose also along with other surface craft if no other and better means were available. And that is where the airship comes in.

As regards operating costs, it is only necessary to consider the thousands of men involved and the thousands of tons of fuel consumed in any operations of surface craft as against the few dozen men and tons of gasoline needed for the airplanes and airships.

Lastly there is the factor of time.

The fact that aerial reconnaissance will furnish results in half the time taken by any other method is a factor which cannot be expressed in money values, but which may be decisive for a whole war and save innumerable lives and billions of dollars.

To give a practical example of what even a small fleet of airships and airplanes could do in the way of efficient naval patrol:

Ten airplane-carrying airships could throw an effective line of patrol clear across the Pacific Ocean from the Aleutian Islands to the Marshall Islands, or across

the Atlantic Ocean from Newfoundland to the coast of Africa.

With a total of 20 airships to include ample reserve for ships under overhaul or repair it would be possible to maintain such a patrol barrier for an indefinite period, and make it impossible for any surface fleet to break through.

This could not be done of course with surface craft except at prohibitive cost.

It seems reasonable then to conclude that the airship will render invaluable assistance to the fleet by protecting it against surprise, ensuring a degree of safety not obtainable in any other way. Even the biggest and fastest airplane carriers, indispensable for the protection of the fleet, cannot carry the line of reconnaissance as far as a few airships. The chances of

an aerial attack on a fleet would become very doubtful, and advance airships might even prevent the enemy's aerial reconnaissance from obtaining satisfactory intelligence.

Mine searching, although the areas will probably most always be in easy range of airplanes, may still be done occasionally and much more dependably by airships, probably by the smaller non-rigid or semi-rigid ships.

Indeed there seems to be a vast field here for small airships in tasks to which the airplane is not so well suited on account of its high speed and short endurance.

These would include mine searching, the safeguarding of the mine-sweeping operations, and the convoying of merchant vessels through mine areas.

The large airship may be used as a carrier of troops, supplies and special provisions.

What has been said so far may seem highly imaginative to anyone not thoroughly acquainted with the flying of airplanes and airships. But the discussion is based on actual experience and does not include anything that has not actually been done or is not simply a matter of elaborating and improving technical details—given of course skilled personnel on both airships and airplanes.

There are other possibilities, however, which would require more working out and testing, as for instance:

There is no reason why methods for refuelling and reprovisioning an airship from a submarine, even under adverse weather conditions, could not be worked out

satisfactorily.

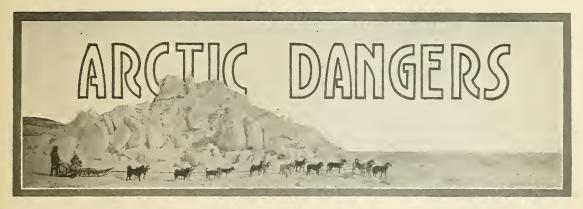
This would mean that instead of being dependent on a land base the naval airship would operate from a floating, mobile base fairly close to the enemy, and one which could not easily be detected and destroyed.

With a special submarine tender the airship might stay out for weeks, and possibly even months, carrying on its reconnaissance work and occasional aerial attacks, sailing almost anywhere in the world—which it could not do as effectively if it had to carry bombs, armament and fuel over the whole distance.

If this supposition is granted, it is not unreasonable to imagine that with an adequate number of airships and submarine coöperating, a highly efficient blockade of an enemy territory might be (Concluded on page 312)



Captain E. A. Lehmann and Captain George Steele, U.S.N., on the transatlantic flight of the Los Angeles.



THE words Alaska, Siberia and Arctic cause a shiver to run down your spine, and the associate ideas develop a train of thought immediately suggesting intense

cold, blinding blizzards and a vast expanse of eternal ice and snow.

You will recall reading books of arctic explorers and will remember the hardships, privations and often the tragic end and the failure of these expeditions—the Scott South Pole and the De Long arctic expedition are examples of such failures.

There are four expeditions on the way now, in airships and airplanes, to explore the most inaccessible and as yet undiscovered areas near the North

Pole. The public mind is filled with many erroneous ideas and misconceptions of the Arctic—its climatic conditions and the things in store for the aerial explorers. When these four expeditions return in the fall, whether successful in their objectives or not, they will at least contribute to our knowledge of actual conditions above 73 degrees north. For instance, Wilkins will fly from Point Barrow into an unexplored region near the Pole, where we assume, from tidal observations, that there is land. If he discovers this land, he will find daisies

and forget-menots blooming, and he will gather eggs and fry a goose or duck, if he lands

These will not be possibilities but actual facts. No matter how far north you may go (and explorers have been within a few hundred

## By Captain F. E. Kleinschmidt

Arctic explorer, naturalist and aviator, who has spent seventeen years in the arctic regions

miles of this unexplored region) flowers and birds will be found in the summer time. Mr. Wilkins may not find hummingbirds breeding on the newly discovered land, yet

I have found the rufous and rubythroated humming-bird in Alaska. When we bought Alaska, it was termed Seward's Icebox. Imagine how some Congressmen would have ridiculed the idea of humming-birds in Alaska!

People who read of arctic explorers replenishing their food supplies with musk ox, caribou, hare and ptarmigan, even in the winter time, seldom think that these animals do not exist on snow; and fewer still have read statistics of extreme cold, and found that no arctic

explorer has encountered lower temperatures than we have on record in North Dakota and parts of populated Canada. It is not nearly as cold as Macready encountered on his recent altitude flights.

Therefore we can readily see that the imagined cold is only a bugaboo to the uninitiated mind. In fact it is a much easier matter to protect yourself from cold than from heat. An African explorer has to suffer far more from heat, fever and poisonous insects than any arctic explorer ever will have to suffer from cold.

So much for the climate. Now what are the real difficulties and obstacles confronting the arctic explorer, the reasons for success, partial success or failure which have charact e r i z e d past expeditions (Continued on page 314)



Polar bear killed by Captain Kleinschmidt with bow and arrow at 72 degrees north, near Wrangell Island.

# ATERO DIGEST

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THE DUTY AND OPPORTUNITY OF THE N. A. A.

CAREFUL reading of the testimony taken before the "investigating committees" that have been trying to find remedies for the various and sundry ailments said to constitute the cause of

and sundry ailments said to constitute the cause of America's failure to hold its place in aeronautics in the front ranks with other nations reveals the necessity of a powerful civilian organization able to cope with the enemies of air development, who so far have succeeded in dominating every hearing with "collective" evidence prepared and presented for the sole purpose of furthering their own selfish ends and without regard to the safety of the country or the welfare of aeronautics.

This is conclusively shown by the testimony of Hon. Randolph Perkins, a member of Congress from New Jersey and prosecuting attorney for the Lampert Committee. In testifying before the Committee on Military Affairs. House of Representatives, January 29th, 1926, he said:

"If I may speak just as a lawyer I find first in examination of ... witnesses of either the Navy or War Department ... that there was great hesitancy ... to tell what the individual thought. .. It is true that three lieutenants from the Navy came to me and said: 'Please don't put us on the witness stand because if you do ... we will not tell you what we think.' I said: 'You know you are protected. You ought not to take that attitude.' One of them answered: 'It's a long distance from here to Guan.'

"If he went contrary to the established doctrine of his department, naturally he could not expect to receive promotion or recognition. Theirs was what you might call collective evidence, not their own individual opinions and beliefs, not based on any scientific knowledge of their own, but rather, tending to establish the doctrine of the Army or Navy."

These were the words of an American Congressman, describing not testimony taken in Soviet Russia, nor even in pre-war Germany, but describing testimony taken in Washington, the capital of the United States—the land of liberty and free speech—the land of Washington, Lincoln and Roosevelt, and in the year 1926 while we are celebrating the 150th anniversary of the signing of the Declaration of Independence.

As long as these conditions are allowed to exist, just so long will the Air Service be kept from taking its rightful place at the head of our national defense and just so long its commercial development will be retarded.

Only a large, active National Aeronautic Association can change these conditions. It must be national not only in name but in the good it renders to those in both branches of the Air Service as well as to those in the industry, in uncovering facts without fear or favor. It must be always ready to fight the battles of aeronautics, whether in Washington, Florida or Maine, and when we say fight we don't mean the kind of fighting done with sweetly scented notes, but the kind with the punch which will make the heads of the Army, Navy and General Staff think that the National Aeronautic Association scents its notepaper with mustard gas.

The opportunities for the National Aeronautic Association to promote the interests of the men in the Service and at the same time assist in building a successful, commercial industry daily become more evident. It should take the same place in the aeronautical industry that the Automobile Association took in the motor car industry. This alone made possible the rapid developments of that industry. The Aeronautic Association should be the axis on which the industry turns and with a competent head and a policy well planned it could be made an invaluable national asset.

Many things now utterly neglected should be done by a going organization.

A co-ordinated national drive should be made to increase the membership and to make the Association self-sustaining so that it could be run as a business and not be dependent upon those who are willing to pay its bills in order to obtain social and political prestige by so doing.

The youth of to-day who in a very few years will be the sustaining force of our national industrial and economic life should be encouraged in aeronautics. Aeronautics is a young man's business. The N. A. A. therefore should have a bureau to deal with junior activities. This bureau should be in a position to supply plans for model planes and gliders, and to promote junior contests wherever possible.

Courses in the elementaries of aeronautics should be made available so as to enable public schools to procure them at a minimum cost.

Plans should be worked out whereby all clubs interested in flying can be brought into the National Aeronautic Association while still retaining their local identity. To do this, they must have voting representation on a fair basis.

A method should be devised whereby the Association will prove attractive and be worth while to the Service flyer and commercial pilot. These men are pioneers; as such they are automatically qualified for membership.

The N. A. A., working with the authorized organizations of the manufacturers, should help to solve their legislative and other problems.

Advice upon aeronautical engineering and research should be supplied to Chambers of Commerce and other civic organizations.

The tendency on the part of the non-flying public to feel that American aeronautics is, and ever will be, dominated by the military and naval Pooh Bahs and that the co-operation of ordinary citizens is not desired, should be done away with. It would be as reasonable for these departments to claim similar dominance over the railways.

#### THE UNOFFICIAL OBSERVER

EWS dispatches from Paris report that the French have at last come to realize the complete folly of that part of the Versailles Treaty by which France sought to hobble the commercial as well as the military aviation of the Germans. Restrictions are to

be lifted from the German aircraft industry, though plans will be greatly helped by permission to cross Germilitary restrictions are for the present to remain in

England had much to do with convincing France that French and English civil aviation suffered more from the restrictions than did the Germans. Flying with clipped wings, restricted to single-engined planes and throttled down to 150-horsepower, eventually Germany found ways and means to evade technical requirements, and in seven years has built up the strongest and most utilitarian air transport service in the world.

Forbidden to fly multimotored ships under German registry, the Germans in turn forbade French and English planes to fly over Germany—and their manufacturers made unrestricted aircraft under neutral registry and flew them over Europe in competition with those of their Allied rivals. Also they managed to do very well with single-motored planes, often flying them with greater loads than those carried by the more expensive multimotored ships of the French and English.

The beginning of the end of France's resistance was apparent when the necessity for detouring around the Versailles Treaty resulted in Amsterdam becoming a busier airport than Le Bourget, the airdrome near Paris. The relentless operation of economic facts and continued pressure from England accomplished the rest.

It is significant that the report of a new agreement between France and Germany came closely upon the heels of the report that the rival Aero Lloyd and Junkers interests had merged into the concern now known as the Deutsche Lufthansa, operating more lines than the French and English combined.

It has been announced that as a result of the German merger-which constitutes the world's first great airways trust—the Deruluft concern, since its formation connected with the Aero Lloyd lines at Königsberg, will use Junkers planes on the line to Moscow. Fokkers formerly were employed, and had made a good record, but it was decided that the new three-motored all-metal Junkers would be more useful for the new fifteen-hour service between Berlin and the Soviet capital. Junkers planes, already preponderantly used by the Germans, are now to supplant other types at all important points.

The French and English have been busy developing multiengined planes for service out of Paris and London and, with the Germans strengthened by a new agreement with the French, there promises to be an interesting three-cornered competition for European longhaul traffic. Germany easily leads in intra-national

or of the second section

France Sees a Great Light New Deal for the Germans The First Great Air Trust Mail Rate's and Pay Loads

## By John Goldstrom

France so far leads in colonial air transport, with her line down into Africa. The Englishman Cobham's flights to India and South Africa are

traffic in passengers and freight.

pathfinding trips in connection with England's colonial plans. The British transcontinental

man territory. Soon the various international difficulties caused by the Versailles Treaty will be dissipated, at least on the surface. The ensuing competition is going to be worth watching.

OVER here? Well, the general ballyhoo for a nation-wide beginning of commercial aviation seems to have given place to a concentrated interest in the arctic expeditions. Not that the latter are free from commercial interest. . . . But that subject is being exhaustively handled in this number by Cy Caldwell.

Since both of my typewriting fingers were frozen in a mail plane bumping over the Rockies in a blizzard I have lost all desire for any flying except as may be had in temperate, though not too temperate, zones.

The arctic explorer is his own best reporter. Whether he succeeds or fails he has a story very much worth telling. Usually he has the good sense to let his story tell itself, simply and without too much recourse to whatever supply of adjectives he may have. Wilkins' account of the first flight over the arctic mountains was an outstanding example.

ONE among several serious questions which confront transportational aviation in the United States is the tremendous lack of enthusiasm with which the public is greeting some of the new feeders for the transcontinental Air Mail. It is a matter of record that one of the Ford planes flying between Detroit and Cleveland on one trip carried exactly sixteen ounces of mail. It is not disclosing a dark secret to say that some of the transcontinental planes frequently fly so light that the pilot has need of an anchor to bring his ship to

Something is very much wrong. It is not the fault of Postmaster General New that the revised rates have failed to attract the volume of public business which the Air Mail Service deserves. There is urgent need for a new revision—downward.

Ford can get along without carrying much mail, for he has his own express freight to carry. The National Air Transport has enough money to see it through an experimental period. But this is not true of others who have taken mail contracts. It is splendid to declare that we shall be able to get along without such subsidies as the Europeans found necessary; but unless the public very soon responds with pay loads there is tough traveling just ahead.



Douglas mail planes used by the Western Air Express in the new service between Los Angeles and New York.

@ Underwood & Underwood.

## DOUGLAS TYPE M-2 MAIL PLANE

THE new Douglas type M-2 mail plane is a development of the 0-2 observation plane produced by the Douglas Company to replace the U. S. Army DH-4 airplane. The compartment of 58 cubic feet, located ahead of the pilot's compartment, has a capacity for 1,000 pounds of mail. The bottom, sides and ends are lined with reinforced duralumin. It is sealed from the engine compartment and thus provides fire protection. The length of the mail compartment is six feet which permits of stowage of long packages.

The mail compartment is equipped with two quickly removable seats, permitting the carrying of two passengers or of ferrying reserve pilots from one field to another. The passengers in this case are seated well down in the mail compartment and protected from the air by suitable windshields. Access to the compartment is provided by the use of aluminum covers over the top arranged and constructed so that when passengers are carried part of the door may be folded down, providing a cockpit opening.

The gasoline system has a total capacity of 130 gallons, adequate for a range of 650 miles. Gasoline is carried in two main wing tanks located in the lower wing panels, each of 60 gallons capacity, and one 10 gallon gravity tank in the upper wing. The two main tanks are so supported that, in an emergency, they may be dropped from the ship instantaneously by the pilot by pulling a release handle. This decreases the risk of fire in a crash, lessens the weight of the ship and prolongs the glide.

Gasoline is fed to the engine by an engine-driven gear-type pump. The pump is fed by gravity from the main tanks, either one or both of which may be cut in or out of action by the pilot. The discharge from the gear pump is regulated by an automatic valve-controlled by-pass so that the carburetor is under constant pressure. The gravity tank may be cut in or out by the pilot. A hand-operated wobble pump is provided to maintain the flow of gasoline to the engine in the event the engine-driven pump fails.

The landing chassis is of the divided axle type with

oleo legs of the latest design approved by the U. S. Army Air Service. The principle of the oleo leg action is that of the hydraulic shock absorber; it has proved to be very efficient in rough fields and in taxing. The tail skid is steerable. All pins and sliding joints are lubricated by means of alemite connections.

The fuselage is a truss of steel tubes and tie rods. The tubing used is chrome molybdenum alloy with welded joints reinforced by plate fins. The structure permits the greatest degree of repair and replacement. The entire section is detachable at the station adjacent to the front wing beam.

All cowling is supported so as to prevent cracking and failure in service, and yet is quickly detached. The cowling over and at the sides of the engine is hinged to permit inspection without actual removal of cowling.

The wing construction is conventional. Spruce spars and ribs are used. Wing struts are seamless drawn streamlined dural tubes, and wing braces are rolled steel streamline rods.

The Liberty 12 engine drives an adjustable-pitch Standard Steel propeller.

Dimensions—Span, 39 ft. 8 in.; wing chord (upper and lower), 5 ft. 8 in.; overall length, 28 ft. 11 in.; overall height, 10 ft. 6 in.

Areas (in square feet).—Wing area (including ailerons), 411; ailerons (4), 50; stabilizer, 35; elevators, 20; rudder, 10.4; fin, 7.

Weights.—The complete airplane with water, ready for flight (no gas, oil, pilot or mail), weighs 2,910 lbs. The useful load consists of the following items: pilot, 180 lbs.; fuel (130 gals.), 780 lbs.; oil (13 gals.), 98 lbs.; mail, 1,000 lbs. Total, 2,058 lbs. The total weight loaded (2,910 lbs. plus 2,058 lbs.) is 4,968 lbs.

Unit loads.—The wing loading is equal to 12 lbs. per sq. ft. Power loading, 11.8 lbs. per h.p.

Performances.—High speed, 145 m.p.h.; stalling speed, 58 m.p.h.; landing speed, 55 m.p.h.; cruising speed, 110 m.p.h.; gas consumption at 110 m.p.h., 20 gals. per hour; service ceiling, 17,000 ft.; rate of climb at ground, 1,100 ft. per minute.



#### SPECIFICATIONS FOR A GOODYEAR AIRPLANE TIRE



1—As big as it should be (to carry its burden easily and gently)
2—As light as it may be (to avoid superfluous weight and resistance)
3—As strong as it can be (to protect pilot, cargo, and ship)

F course, the dimensions of a Goodyear Airplane Tire are determined by highly-skilled engineering, and consideration for the type and size of the plane.

And similarly, the weight of a Goodyear Airplane Tire is determined by its size and the duty to which it will be put.

But on that third point: Goodyear workers put something more into

an airplane tire than precise engineering. For here is an organization that has full faith in aviation. Here are men who give the very finest they have in materials and workmanship into any product for aerial service.

Goodyear Airplane Tires are offered by men who want pilots to have the very best. So are all other airplane parts — everything in rubber — made by Goodyear.

Aeronautic Department

THE GOODYEAR TIRE & RUBBER COMPANY, INC., AKRON, OHIO



.. . AEDO DICEST

## LIGHT AIRPLANES

LYWOOD is being used to a greater extent for the bodies of light airplanes principally because of its

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simplicity of application. Although it usually results in a slightly heavier machine, plywood is easy to work, is stronger and it has a more finished appearance than the usual box-girder construction which must be cov-

George F. McLaughlin Corporation. After fifteen flights in all kinds of weather, Corporation. After fifteen during which the machine proved "trickless" and easy to handle, it was decided

Kinner Airplane and Motor

that no changes in the design or construction were necessary, and the ship will be manufactured on a production basis in the near future.

While the KE-5 was flown with a 3-cylinder 60 h.p. Lawrance motor, future planes will be equipped with the latest type 6-A-3 Anzani 70-80 h.p. engine.

Two windows are provided directly above the pilot's seat in addition to the windows on the sides, giving the pilot good vision in every direction. One set of controls is now installed but future ships will have a dual installation. The enclosed cabin type of ship makes an ideal training plane, for pilot and student may carry on conversation during the instruction flights. The passenger's seat is located a little to the rear of and 4 inches lower than the pilot's.



ered with fabric and doped. Two examples of typi-

The Italian Macchi M-20 light biplane.

cal light planes with plywood bodies are illustrated here.

The Italian Macchi M-20 biplane is a product of the well-known constructors of flying boats who are also pioneers in light plane building in Europe. The landing wheels may be removed and twin floats substituted, converting the M-20 for water flying. This machine is powered with the 60 h.p. air-cooled Lawrance engine. Additional specifications of the M-20 are not available at this time, but the side view gives a clear conception of the body lines.

An American example of a plywood-body light plane is the two-passenger Kinner monoplane. It was built purely as an experimental ship with the idea of placing it on the market when perfected to a point where its safety and reliability warrant its production. The machine was first flown at the Glendale (California) Airport by its designer, Mr. W. B. Kinner, president of the

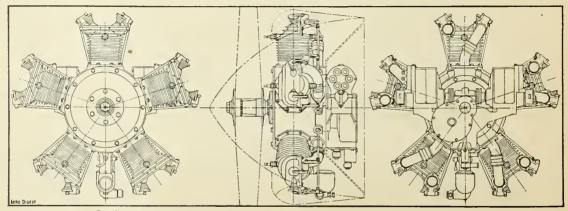


The Kinner KE-5 two-passenger light monoplane.

The specifications of the KE-5 monoplane are: Span, 31 ft. 6 in.; length over all, 21 ft.; height, 7 ft.; wing chord, 6 ft.

The weight of the machine is 700 pounds. Fuel consumption is at the rate of 20 miles to the gallon and 75 miles to the quart of oil.

High speed, 85 miles an hour; landing speed, 30 miles an hour; ceiling 13,000 feet; time of climb to 1,000 feet, 1 minute.



Outline drawings of the Rickenbacker engine built especially for light airplanes.

The Seventeen years of first~hand specialized experience in discovering, facing and solving the problems of air navigation is an asset time alone can create.

Every purchaser of a Martin plane shares in this asset.

In Commercial Aviation this extra factor
of safety will assume
a particularly forceful significance.

THE GLENN L. MARTIN COMPANY
BUILDERS OF QUALITY AIRCRAFT SINCE 1909
CLEVELAND, OHIO.



## A NOD AND A WINK

TT'S getting so now that a man can't find his favorite murder or divorce case on the front page of the paper. It

Polar Passions By Cy Caldwell

isn't to see the Pole. You can see 200,000 Poles in Pittsburgh. No. they are going North to find whether Scotch can be

is in back with the ads, while the front page is cluttered up with polar expeditions by air—and it's amazing how many of them there are. A list of those pilots on their way to the Pole reads like a page from the New

York telephone directory.

There are the Wilkins Expedition and the Byrd Expedition by airplane, the Amundsen-Ellsworth Expedition by airship, and the motorsled-airplane expedition of the French under Darcis, to mention just a few picked at random from the daily news. No one has ever compiled a complete list of these expeditions to the Pole. They are too many; and new ones are being announced almost hourly. Since writing the last sentence I have heard of one German and two Norwegian expeditions that are about to start. And Leigh Wade and Harry H. Ogden are to head the Harvard Expedition to add a bit of culture to the doings at the Pole. Polish, one might say. Wade is at present directing the membership drive for the World War Veterans' Light Wines and Beer League. I, for one, hate to see him leave a useful service like that to fool around the Pole. A bottle of beer is worth ten bottles of melted iceberg. But apparently the winter down here wasn't long enough or cold enough for these boys; they crave cold-storage, and they're going where there's nothing else but.

When all these assorted expeditions congregate at the Pole, the name will be changed to Exposition, and Flo Ziegfeld or Tex Rickard will be invited to go north and manage it. With a good snappy chorus from Earl Carroll's Vanities, including the bathtub act, and a bout between Dempsey and Terry McGovern as added attractions, the Frigid Follies should play to capacity houses. Especially if they get Gilda Gray to shimmy and warm things up a trifle. They might pack the igloo every show and take in enough so the Polarites wouldn't have to come back and lecture. And what could be sweeter than that?

Which reminds me—the race to the Pole will be nothing compared to the race back to the lecture tour. One hasty glance at the Pole, and back the boys will come to tell us about it-seats \$2.00, \$1.50 and \$1.00, plus tax. No amusement tax will be charged to hear Commander Byrd lecture on the Navy Expedition. All

you'll have to pay is the State gas tax.

This lecture feature is a point that hasn't been mentioned in the daily news, but it is the point, nevertheless. Who in the world would take the trouble to fly to the North Pole and then just stand and lean against it, or come back to sit down and think about it? Not a soul. It simply isn't in human nature to fly North and then say nothing about it. Even people who have got as far north as Montreal have lots to talk about-good Scotch at \$3.00 a quart. No wonder all these expeditions are going up to the Great Frozen Spaces. It poured at those low temperatures, or whether you have to chip off a piece to suck.

I was in at the start of the Wilkins Expedition, myself. I joined it for about 20 minutes last January at Garden City, which was as far north as I cared to go. The Pioneer Instrument Co. asked me to take Capt. Wilkins and Lieut, Eielson up for a flight in a Travel Air plane (not an advertisement) to demonstrate a sextant. It was one of those bitter cold days with a mean wind; and I was wearing a light suit and overcoat and B V D's. Also, I had just recovered from a night in Greenwich Village, which, at best, is a poor training ground for polar explorers—and I had not been at my best toward the end of the night, either. The wind bit right into me. Capt, Wilkins was better fixed to withstand cold. He wore a full beard that defied the wind, while I had been reading the shaving-soap ads and didn't have a single protecting whisker on my face. That school-girl complexion is useful around hotel lobbies, but what an explorer needs is a complete set of King Georges-keep out the cold and let the egg drop where it will.

Eielson and I made a flight during which he took a sight on the sun and found what I understand is called our "mean position." The man who called it that had a fine sense for the right word. When we landed I recollected a date I had in New York, and let MacMullen fly the Captain. My date was with a radiator. That ended my engagement with the Frigid Follies. Let who will find the Pole; lead me to the steam pipes.

In Washington I met Commander Byrd who heads Expedition No.— I forget the number but I think it's No. 17. I was surprised to learn that he had been invalided from the Navy. And yet he was well enough to fly to the North Pole! That just goes to show what strong, silent men they demand in the Navy—especially silent men. Strength is not so essential as silence. They have laddies to lift around the heavy guns and boilers and so forth, but every man must do his own silencing. The trouble with Mitchell in the Army, if you remember. He was plenty strong enough. But we're drifting far south from the Pole, though it all comes under the general heading of Lectures.

Commander Byrd is going north on one of the U.S. Shipping Board's vessels loaned for the purpose. This is the first reasonable excuse I have heard for the existence of the Shipping Board. It's fortunate Byrd didn't want to borrow an office chair from the Board, for he wouldn't have been loaned it. They're all occupied. They'd just as soon give you a ship, but they wouldn't stand up long enough to let you even sit down in one of their chairs.

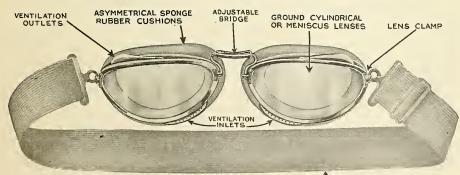
Commander Byrd is the ladies' favorite in the Polar (Continued on page 310)

## Meyrowitz LUXOR Goggles chosen for the Byrd Arctic Expedition

Lieut. Commander Richard E. Byrd, leader of the Byrd Arctic Expedition, selected every item of equipment to be taken on this important and difficult undertaking with the utmost care.



Only the best was considered. When the time came for the selection of goggles equipped with amber sunglare lenses his choice was the Number 6 U.S. Air Service "LUXOR" Goggle.



EXTRA WIDE CONTINUOUS HEAD BAND

NUMBER 6 U. S. AIR SERVICE "LUXOR" GOGGLE

The LUXOR No. 6 U. S. Air Service Goggle is our latest, made especially for the U. S. Air Service. Providing an unobstructed field of vision, comfortable face-fitting rubber cushions that permit continuous wearing without irritation. Fogging and steaming of lenses prevented by ventilators with dustproof inlets. Adjustable bridge insures fit and face comfort. Lenses held in place by special instantly locked metal rim, permitting quick replacement. Light metal construction and flanged eyecup rim prevent possibility of cutting face in case of accident. Extra wide continuous head band.

ORIGINATED AND MANUFACTURED EXCLUSIVELY BY E. B. MEYROWITZ



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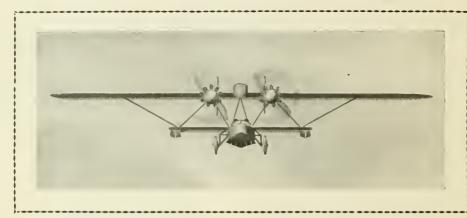
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It is the duty of discriminating purchasers of aeroplanes to consider "SAFETY FIRST" as the requirement of prime importance.

#### THE FOUR-PASSENGER AIRCO AMPHIBIAN.



#### SPECIFICATIONS AND PERFORMANCES

(Performances given are with full load of 1000 pounds.)

		- · · · · · · · · · · · · · · · · · · ·
Span	48 ft.	Load per square foot 8.87 lbs.
Length overall	28 ft.	Load per h. p
Height on wheels	g ft.	Load factor 5. lbs.
Area of plane 3	72 ft.	High speed 100 m. p. h.
Weight empty2300		Landing speedbelow 40 m. p. h.
Normal useful load100	o lbs.	Climb at ground600 ft. per min.
(Pilot, 3 passengers, 4 hours'	fuel)	Ceiling10,000 feet
Power240	o h.p.	Gliding angleone to nine
(2 air-cooled engines, 120 h.p. e	each)	Cruising speed on 1 motor 70 m.p.h.

Equipped with an extremely simple and efficient retractable landing gear.

The "AIRCO" AMPHIBIAN has been especially designed by Mr. Igor Sikorsky, after careful consideration of the results of over two years of intensive developments in actual flying tests of this type by Lieutenant George R. Pond, U.S.N.R., who is in charge of the supervision of the manufacture and tests of all "AIRCO" Amphibians.

IMPORTANT: Purchasers are supplied with indemnity bonds, issued by

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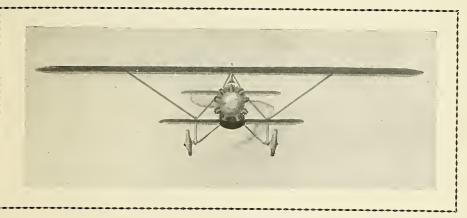
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## stands for Reliability—

AIRCO planes are the safest in the world. They are manufactured especially for us by the Sikorsky Manufacturing Corp.

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Span 32 ft.	Load per sq.
Overall length 18 ft.	Load per h. p
Height 7 ft.	Load factor .
Area of plane182 sq. ft.	High speed
Weight empty,000 lbs.	Landing spee
Normal useful load550 lbs.	Climb at grou
(Pilot, 1 passenger, 3 hours' fuel.)	Ceiling
Power (air-cooled engine) 120 h. p.	Gliding angle

Load per sq. ft. 8.5 lbs.
Load per h. p. 12.9 lbs.
Load factor 8.5 lbs.
High speed 130 m. p. h.
Landing speed below 40 m. p. h.
Climb at ground 1000 ft. per min.
Ceiling 17,000 feet
Gliding angle 0ne to thirteen

Price \$4,300 f. o. b. Long Island factory

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AND KAUFMAN & BAER COMPANY, PITTSBURGH, PA.

# THE YARNS OF "HELL'S BELLS" O'NEIL

T this place I speak of," says Hell's Bells, "we were so far away from London we didn't know which war we were in, if any. We didn't know whether

The Spurs and The Major's Bathtub

away from London we didn't know which war we were in, if By James Warner Bellah decided to take turns pushing the major into different pro-

there was a new one or whether it was the same old one. It's kind of hard to tell when you aren't fighting regular and the only guy who calls is some fellow who steps out of a Zep or something at twenty thousand and lands without a parachute. We tried to tell by his uniform but he was wearing pink silk pajamas so there

you are.

"When Yank Hank McCarthy lands amongst our midst to learn what we knew about the bomb sights we were experimenting on, we were of a mind to ask him what war it was, only we didn't have to, for we see it's the same old war by the non-flying major who comes with Hank to tuck him in at nights and to see that he wears his spurs and comports himself as an American Officer should in the presence of and under instruction by a foreign government, which was us tramps up at Points East.

"The major is a bird. He's a West Pointer who

soured his youth chasing Aguinaldo in the Philippines and tainted his old age shooting at Villa's rear guard in Mexico. He sees his duty and does it. He tells Hank McCarthy to wear them spurs in the air and out, because he's in a mounted service which was the old Signal Corps. He tells our major that we look like a bunch of refugees from a Lapland village. which is true but

not the most tactful thing in the world to say.

"Well, Hank is a good flyer being as he hasn't been in the army long enough to learn anything except flying and drinking, but this major is a problem. He never lets Hank get comfortable for five minutes. He would've had Hank flying in a boiled shirt if he could've found a paragraph in I.D.R. about it. He was the kind of a major that sergeants forget.

Well, we told Hank where the rat poison was but he disliked to insult the rats, so then we decided to take turns pushing 1 the major into different propellers but before we got

around to it, the bathtub arrives.

"Now a bathtub has a place in the world even if it folds up—but a folding bathtub that is made of baby blue canvas has no right to hang around where men are men and women W.A.A.C.'s and majors are non-flying.

"The morning it arrives, three things happen. First off, the major is particularly nasty about the spurs. Hank had tried to sneak into a cockpit without them. There was quite a scene. 'By the left hind leg of Mahoom,' yells the Major, 'put on them spurs! What are you, a ruddy civilian?'

"'Yes, Sir. No, Sir,' says Hank, and he puts on the spurs and hops off to drop incendiary bombs out on the ranges, that being the way he worked for his board. As soon as Hank is well in the air, the major makes a break for the baby blue bathtub, and his first bath in two weeks. And as soon as he finishes, his

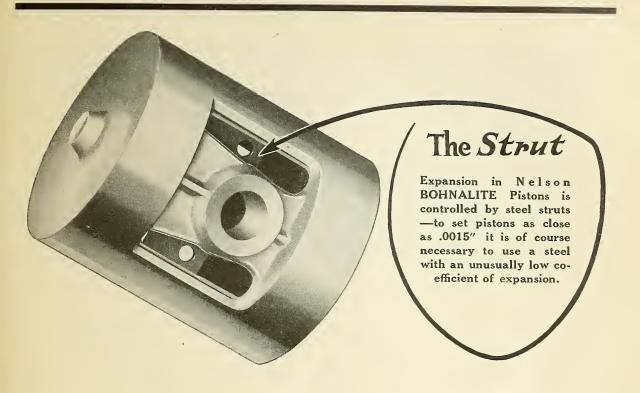
batman, which he called a striker, takes the bathtub out behind the huts and spreads it flat to dry. Now it so happens that Hank didn't get enough practise on the ranges that day, and remembering that the hut roofs are thin, he decides to kill one major with two spurs. He straps 'em together, takes a sight, corrects for wind and lets 'em fly-whango! And they did.



"The major is a bird. He's a West Pointer who soured his youth chasing Aguinaldo in the Philippines."

"Scene 2. The tarmac with Hank taxiing in. We run out in a mob, pull his tail around and tell him what's happened. He bursts into tears. 'My God I meant to get him!' Then he gives her the gun and goes out to get lost in the fog.

"Scene 3. The Mess at noon. Heroic, that's what. Every officer turned in his chit book and a blank check (Continued on page 314)



## Pistons fit to .0015"

Nelson BOHNALITE Pistons can be fitted as close as .0015"—a fitting made possible by the use of steel struts which control the piston expansion.

The struts are cast a part of the BOHNALITE, providing a piston of the weight and heat conductivity of aluminum with a coefficient of expansion as low as steel.

BOHN Products include Ring True Bearings— BOHNALITE Castings, both permanent mold and sand—Nelson BOHNALITE Pistons.

# BOHN ALUMINUM & BRASS CORPORATION EAST GRAND BOULEVARD, DETROIT



## THE RYAN M-1 MONOPLANE

WO years ago, T. C. Ryan, president of Ryan Airlines and W. H. Bowlus, consulting engineer, drew up plans for a commercial monoplane that could also be used for pleasure without changing any of the construction details. Three prominent engineers on the West coast contributed to the stress analysis. The first plane, the M-1, was constructed in San Diego in February. It broke five records for cruising speed with full load between San Diego and Seattle and return.

The M-1 is an externally braced monoplane of comparatively small size. The wing is mounted above and direct to the fuselage structure, but a false top of fuselage with cockpit cowling below gives the wing the appearance of being mounted on center section struts. This structure makes possible the use of doors for both cockpits without changing the straight line of the upper longerons.

As a passenger plane, seats are provided for two or three passengers and three hundred pounds of mail, express or baggage. Designed as a mail plane there is cargo space for four or five full sized mail bags.

The fuselage is built entirely of chrome molybdenum steel tubing trussed like a bridge. There are no wires or rigging from wing to tail surfaces. An adjustable stabilizer compensates for variable loading. This construction is light in weight, uniform in strength, durable and easy to repair.

The engine mounting with its cowling is completely removable by taking out four bolts. This makes it possible to utilize several different type motors or to have a spare motor on hand so that the plane need not be out of use while motors are being overhauled or changed. A motor mount can be removed and a new one installed in about thirty minutes.

The tail surfaces are all steel construction. The tail skid is of the spring leaf type and steerable on the ground to allow the plane to be maneuvered while taxiing.

The wing of the Ryan M-1 is moderately thick of

the non-tapering type. It is built in one unit of full span. Spars are of box type with special two-ply mahogany siding. Ribs are built up of plywood and spruce and are of truss type. The leading edge of the wing is formed with mahogany plywood to give perfect wing curve form. The Clark "Y" wing curve used allows for an unusually slow stall landing. The four steel tubing wing struts are streamlined in the form of a high speed airfoil, creating a lift and increasing the plane's inherent stability.

Pilots who have flown the plane marvel at its lightness on controls, quick response and the ease with which it can be stunted and maneuvered. It can settle flat after losing flying speed and continue this indefinitely with no tendency to fall into a spin or dive. Controls are effective even in this phase of flight.

The Ryan M-1 was originally designed around the Wright Whirlwind motor for air mail and passenger lines demanding a small plane with a high cruising speed and high pay load capacity.

Performance with 200 h.p. Whirlwind and 600 lbs. pay load: Cruising speed, 115 m.p.h. at 1500 r.p.m. Climbing speed, 80 m.p.h.; high speed, 135 m.p.h. at 1800 r.p.m. Stalling speed, 45 m.p.h. Landing speed, 45 m.p.h.

Rate of climb, 1,200 ft. first minute. Climb in ten minutes, 9,000 ft. Climb in 39 minutes, 17,500 ft. (service ceiling). Absolute ceiling 19,000 ft.

After the tests with the Wright Whirlwind, a Curtiss 90 h.p. OX5 was installed and later a 150 h.p. Hispano-Suiza and a Super-Rhone.

Performance with 150 h.p. Hispano and 500 lbs. pay load: Cruising speed, 110 m.p.h. at 1500 r.p.m. High speed 125 m.p.h. at 1650 r.p.m. Landing speed, 45 m.p.h. Rate of climb, 1,000 ft. first minute. Climb in ten minutes, 7,000 ft. Service ceiling, 15,000 ft.

Performance with 90 h.p. OX5 and 350 lbs. pay load: Cruising speed, 95 m.p.h. at 1350-1375 r.p.m. High speed, 100 m.p.h. at 1400 r.p.m. Landing speed, 40 m.p.h. Climb in ten minutes, 5,000 ft.

## AIR MEET

JUNE 4-5-6 FLINT MICHIGAN

Official Sanction, National Aeronautic Association

## PRIZE MONEY

will be paid prior to noon June 7, 1926

Free gasoline and oil to participants.

SPEED RACES—

FLY TO FLINT RACE—

DEAD STICK CONTEST—

Entries close May 15th.

PONY EXPRESS RACE

## FREE

OPEN TO THE PUBLIC — NO GATE ADMISSION

## MANUFACTURERS

Inside exhibition space adequately policed will be furnished gratis to manufacturers of airplane motors, parts, instruments and accessories. Reservations must be made prior to May 15th.

ADDRESS INQUIRIES

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FLINT AERO ASSOCIATION CHAMBER OF COMMERCE

FLINT, MICHIGAN

FLY TO FLINT

## WESTERN NEWS

#### SANTA BARBARA NEWS

By EARLE OVINGTON

DR. J. BERT SAXBY, JR., called "Bert" within a hundred yards of a Jenny, is trying to put one over by applying the cotton dusting methods to the dusting of walnut trees. Walnut trees, like cotton plants, have their own pet variety of parasites and Bert figures that he can knock 'em out more pleasantly, quickly and profitably by sitting in the pilot's cockpit of his faithful Jenny than by pumping poison dust at them from the ground. He's made all arrangements to prove that he knows what he's talking about, having replaced the passenger's seat in his Jenny with a box in which to keep the dust. Then he mimeographed a bunch of invitations and distributed them around the walnut district as every true "peelo" should distribute printed matter-by scattering them from his ship.

I hasten to add, in passing, that I hope Bert's old coffee grinder, otherwise known as an OX5, keeps on the job while he's over the trees. I've never set 'er down in a cotton field but I should imagine it's softer than a walnut orchard!

Dwight Faulding sold his Jenny to a iellow in a neighboring town. No, he had nothing against the town or the inhabitant thereof. Just got tired of flying the old crate.

Which reminds me, I've taken the agency for the Swallow in southern California. Walter Varney, up in Frisco, had the whole of the Pacific Coast but Walter's busy with his many prospects in northern California, so he generously relinquished southern California to me. I've ordered three ships by wire, to prove my faith in commercial aviation. For the past fifteen years I've been spending money on aviation. Now that commercial aviation is really coming into its own, I thought I'd climb aboard the bandwagon and try and recover some of this past expenditure.

The officers of the Santa Barbara Aero

Club are going down to Los Angeles to attend the first meeting called by the California Development Association to seriously consider commercial aviation. That's a good sign, when such a world-renowned organization turns its attention to the airplane as a commercial vehicle.

Hoyt, with a Travel Air, dropped down last week and gave some of the local pilots a hop in a real ship. The Travel Air is just getting into southern California and it is already making good. It's a fine little ship. I know first hand, because Hoyt was good enough to let me take it up to four thousand feet, alone, and stunt it. It does most of the stunts easily, except that it hates to spin. Which is in its favor, considered from a commercial standpoint.

#### CALIFORNIA'S AERO-NAUTICAL CONFERENCE

By Frank McKee

California Development Assn.

I T is the consensus of opinion of flyers and commercial aviation executives that the Pacific Coast offers ideal conditions for the development of the new and highly potential field of transportation. The combination of the moderate all-year climate and the barriers of distance and mountain ranges which handicap the time of other methods of transportation, together with adequately populated areas stretched at intervals from the Canadian border to the Mexican line, make this empire of the West unique in aeronautical potentialities.

Through the farsighted vision of California civic leaders, this great natural opportunity for the West to take national leadership in commercial aviation progress is not to be overlooked. As directors of the California Development Association, California's State Chamber of Commerce, these men are issuing a call to all business directly or indirectly concerned in commercial aviation.

There are several problems basic to the development of commercial aviation which will be laid before the conference for solution; problems which can only be solved through unified action. Important among these problems are: adequate landing fields and necessary facilities for the aerial voyager; education of business men to the benefits of commercial aviation.

#### SPEED SAVES AN EYE

T HE sight of an eye was saved by the speed with which Fred Hoyt of Clover Field in his OX5 Travel-Air plane rushed Dr. H. K. Cline, eye specialist, from Los Angeles across Death Valley, at an altitude of 8,500 feet, to Tenopah, Nevada.

Traversing the distance in less than four hours to administer aid to a suffering miner who had been injured in the blasting of a tunnel and who without the skill of an experienced oculist would now be blind, Hoyt proved to be the veritable winged messenger of mercy.

So valuable was the airplane in this emergency that C. C. Julian, of the mining district, intends to start an airline from Los Angeles to Tenopah.

#### RYAN'S RECORD FLIGHT

ON its initial cross-country run from the Mexican border to the Canadian border on the Pacific Coast, the Ryan M-1 monoplane, powered with a Wright "Whirlwind" 200 horse-power air-cooled engine, reduced the flying time record between San Francisco and Seattle by 27 minutes and cut down the government's required flying time in every instance by one-third. The flight was made to map out landing fields and determine the running time between air mail stops along the coast route operated by the Pacific Air Transport.

The entire distance of 2,624 miles was covered at an average of 114.08 m.p.h. with the engine cruising at 1,500 r.p.m. T. C. Ryan, president of the Ryan Aircraft Company, piloted the record-breaking plane.

The mileage on the trip was taken approximate airline and did not include deviations from airline due to contour of the country and the winding course at times followed. An ordinary wood propeller was used and not one engineered for this plane. The 126-mile flight from the Ryan San Diego Airline field to their terminal on Meas Drive in Los Angeles was made in just 62 minutes cruising, the plane carrying as passengers Vern C. Gorst, president, and C. M. Comstock, vice-president, of the Pacific Air Transport, Inc., with 200 pounds of express and baggage. The Pacific Air Transport is using ten of these planes in their Los Angeles-Seattle run. This route is the longest privately owned air mail line.



T. C. Ryan (left) and B. F. Mahoney (right) delivering a Ryan M-1 mail plane to Vern C. Gorst, president of the Pacific Air Transport.



## SUCCESSFUL AIR TRANSPORTATION



Forecast by the World Flight
Proven by Our Latest Products



The Transport of the Air Service



The Mail Plane of the Nation



## THE DOUGLAS COMPANY

Santa Monica California





Paul Richter, Jr., pilot of the Aero Corp. of Cal. and his 425-lb. passenger.

#### FLYING BY THE POUND

ECENTLY the Aero Corporation of California, formerly the Burdett Airport, inaugurated a new scale of prices for passenger and sight-seeing flights in the vicinity of Los Angeles. "Scale of prices" is used in its most literal sense in this case for passengers, when applying for rides, are immediately placed on a set of scales that print their weight and the length of trip they wish to take. Thus a five-mile hop is one cent per pound, ten miles at two cents, fiiteen at three cents, twenty at four cents, and a straight stunt ride with all the trimmings is five cents per pound. Two passengers are always carried on these trips, with the exception of the stunt trips, and the passengers seem to be far more pleased with this system than with the flat prices formerly used at this field when only, one passenger was carried at a time.

However, the system has its drawbacks, Observe the illustration. It is not a balloon ascension but the first passenger to apply at the Aero Corporation for a ride under the new scale of prices. This passenger abso-Intely refused to ride after weighing in and finding that he would be charged four dollars and twenty-six cents for a five-mile hop-He happened to be Fatty Alexander of the Ice Rock Comedy lot and claimed that the Aero Corporation was guilty of discrimination and further that the company was in league with the Thin Men's Association. Rather than lose their first passenger under the new system the Aero Corporation offered to fly him gratis, much to the worriment of Paul Richter, Ir., who was assigned to pilot him. However, after vainly trying to wedge him into a Jenny with the aid of crow bars. chain hoists and cup grease the company had to give it up and Alexander left the field promising to return as soon as the Aero Corporation obtained a Barling bomber.

#### LONG BEACH AERO CLUB

THE Long Beach Aero Club, in addition to their regular meeting, held a banquet on March 30th at the Virginia Hotel, Long Beach, Calif., to which the aviation public was invited

About one hundred leaders of the industry from all parts of southern California, attended. Motion pictures of the first airplanes flown by Wilbur Wright and the different types of planes showing the improvement from that time to the present, also a government film showing the bombing of battleships from airplanes, were projected after the banquet.

Commodore Bill Fox presided in his usual nleasing manner

Harris N. Hanshue, president of the Western Air Express Corp., spoke on commercial aviation and air legislation.

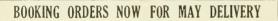
A. G. Woolley, traffic and publicity manager of the Western Air Express, gave an interesting talk on the growth and change in transportation.

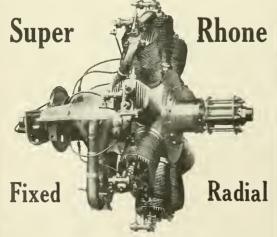
Commodore Frank Mason of the Brea Air Club told of the plans under way for the Brea Air Meet on April 24th.

The speaker of the evening, Capt. H. Hammer, gave a very interesting and instructive talk on arctic flying, and told of his trip with Amundsen. He also gave an interesting description of his late trip around the world

Commodore B. E. Morthland of the Santa Ana Air Club reported the growth in membership of the Santa Ana Club to over sixty members, since its formation four weeks ago.

A. E. Riley, who has made a study of the aviation industry in every city throughout the country, spoke of the industry from a financial standpoint.





## Air-Cooled Aircraft Engine

120 HORSEPOWER at 1400 REVOLUTIONS We offer the commercial aviation field this new engine at a popular price.

Low maintenance cost. Surpasses all others in ease of operation, installation, service and repair.

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Super Rhone Engine & Flying Corp. Exclusive Sales Agents

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# K.W. Montee Aircraft Co. Clover Field Santa Monica, Cal. SPECIALIZING IN AERIAL SURVEY and OBLIQUE PHOTOGRAPHY Custom Built Aircraft

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## Approaching Perfection



The Ryan M-1, powered with Wright Whirlwind

# The progress of aviation and airplane design is continuous and rapid

THE RYAN M-1 is an embodiment of the most advanced commercial design of today. Its super-performance, economy of operation and high factor of safety reflect its careful and scientific engineering.

THE RYAN M-1 cruises at 115 m.p.h with 600 lb. pay load. It will take this load off the ground in quiet air with a run of 390 feet and

climb to 1,200 feet the first minute. Throttle open, leveled off, it attains a speed of 135 m.p.h. or will float at 45 m.p.h. for a short landing.

THE RYAN M-1 with its steel tube fuselage, one-unit wing construction, and a gliding angle of 10-1 loaded, is a sensational airplane value. It represents a new slogan for commercial airplane operators, — "ECONOMY PLUS."

Price \$8,400. Whirlwind equipped

# RYAN M-1

"The plane that pays a profit"

Manufactured by

## RYAN AIRLINES, Inc.

3200 Barnett Avenue SAN DIEGO, CALIFORNIA



# For the Pilot's Comfort

Leather Cushions add much to the pleasure of flying because leather does not catch the clothing, causing it to cramp or restrict the movement of the pilot.

The Fokker Plane, used by Commander Byrd on his Arctic Expedition, is upholstered in leather.

# Nothing takes the place of LEATHER

AMERICAN LEATHER PRODUCERS, INC.
One Madison Avenue, New York, N. Y.



Aviation Pilot Floyd Bennett, Commander Richard E. Byrd, Lt. George O. Noville

## Leather Goes to the North Pole



This red-and-white plaid leather coat was taken by Lieut. George O. Noville for the Queen of the North Pole. It is particularly designed for Women Aviators. All colors are available.

The three-quarter length topcoats worn by Commander Byrd and his assistants were made especially for use on their Arctic Expedition.

The coats are of dark blue leather made from the top grain of a steer hide. They are particularly soft and pliable—and are waterproof.

FOR AVIATORS' and SPORTSMEN'S CLOTHING

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Write for names of manufacturers

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Maj. C. C. Moseley, D. W. Douglas, and H. M. Hanshue at the opening of the Western Air Express Mail Line.

#### DOUGLAS ACTIVITIES

THE Douglas Company has recently delivered to the Western Air Express Inc. six of the type M-2 air mail planes. The Western Air Express Inc. is operating Air Mail Route 4, between Los Angeles and Salt Lake City, a distance of 600 miles. One stop is made at Las Vegas.

Many inquiries are received by the Douglas Company for airplanes with the carrying capacity of the Douglas cargo airplane. These inquiries come from sources heretofore not given much thought by the airplane manufacturers. It is believed that the industries now making these inquiries will in the near future open a new market for cargo and passenger airplanes.

The transportation of the Army Air Service is being taken care of at the present time by the Douglas C-I cargo airplanes and an order has been placed by the Air Service for seven more cargo planes to be known as the Douglas C-2 type. The Air Service is using these cargo airplanes for ferrying pilots to the Douglas Company at Santa Monica where the pilots obtain O-2 observation planes and fly them to the various flying fields throughout the country.

The company will soon deliver the last of 75 observation planes to the Army Air Service. All of these planes, excepting the

ones assigned to the Engineering Division for experimental purposes, have been flown from the Douglas plant by Air Service pilots. This method of delivering planes is favorably regarded by the Air Service as it permits the acceptance of the plane in flying condition thereby avoiding the expense of assembly and inspection at their destination.

The Engineering Department is preparing drawings for the 37 new army observation airplanes recently awarded the Douglas Company. Deliveries of these airplanes are to follow closely upon the completion of the present Air Service order for 75 planes.

#### WESTERN AIR EXPRESS OPENS MAIL LINE

THE first ship on the Los Angeles-Salt Lake City air mail line, operated by the Western Air Express, Inc., started for Salt Lake City on April 17th at 7:35 a. m. with 500 pounds of mail. Piloted by Paul Graham, the Douglas type M-2, six of which are used on this route, arrived at Salt Lake City one hour ahead of the scheduled time. The return ship from Salt Lake City, piloted by Charles I. James, arrived at the Los Angeles port at 5:07 p. m., thirty minutes ahead of schedule.

Five naval planes went out to meet the mail ship at Los Angeles and flew back with her in V formation; and many Army, Navy, commercial and private planes greeted her on arrival at the field.

#### THE BREA AIR MEET

T HE tremendous crowd present at the Brea, California, air meet on April 24th showed the increased interest in aeronautics on the coast.

All the races were run in a 5-lap course around 2 pylons over a total distance of 10 miles.

In the Jennie Scramble there were 7 entries. Art Goebel won in 8.40 min. Eddie Martin of Santa Ana was second; time,

Commercial Special under 100 h.p. Race -winner, Fred Hoyt in an OX5 Travel Air in 8.8 min. Lieut. Thomlenson of San Diego, second place, 8.33 min.

There were 2 entries in the High Speed Free-for-all which was won by Eddie Martin flying Nieuport Special, in 5.2 min.



Aero Digest Cup won by Fred Hoyt, C6 Travel Air, at the Brea Air Meet.

The OX5 Special Race had 4 entries. Fred Hoyt with a Travel Air won in 7.3 min.: Art Goebel, second.

In the High Speed Commercial Race there were 4 entries. Fred Hoyt won this contest also in a C6 Travel Air in 6.19 min. Second, George Lyle, time, 7.21 min.

Eddie Martin won the Sport Plane Special Race, time, 6.53 min.; Al Gilhousen, second.

Eddie Martin, with his Nieuport plane, won the free-for-all stunting contest. In the stunting contest for Jennies, Art Goebel was winner. C. F. Austin of Dycer Airport won the parachute landing contest,

Exhibitions of speed were given by Government Douglas observation planes and by Earl Daugherty in a Fokker Special plane.

Art Goebel and Jack Frye of the Aero Corporation of California with Al Johnson demonstrated a "plane change" which was the hit of the audience. Flying only four hundred feet high, the change from one plane to the other was made within one hundred feet of the judge's stand.

Among those present were representatives of the State, County and various Aero Clubs.

The activities of the Brea Air Club show many innovations in their publicity to arouse interest in their district and Commodore Mason is to be commended on the excellent work he is doing for the cause of aeronautics.

#### BRAND NEW JENNIES

Original crates, perfect condition, \$1500. New Jennies, uncrated for storage, excellent condition, \$1250.

Very slightly used Jennies, splendid condition throughout, \$1000. Used Jennies, ship and motor in good condition, \$650

to \$800. Canucks, Standards (3 and 5 place), and Thomas Morse

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The Chicago Flying Club has already ordered a series of W. A. C. King Birds for the training of their flying members and for carrying passengers at their Chicago airport.

Further information about the

## KING BIRD

will soon be released. Watch for our next advertisement or send in your name for particulars which will be sent as soon as a King Bird circular is released.

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## NEWS OF THE N.A.A.

#### SOUTHERN CALIFORNIA

THE Southern California Chapter at a meeting at Los Angeles on April 4, honored Lieuts. Walter A. Hamm and Robert P. Lehr, who left for Little Rock, Arkansas, the next day as the chapter's entrants in the National Elimination Balloon Race, and Lieut. Kane, chairman of the meeting, who departs soon for Japan to represent the United States.

This is the first time in the history of the balloon races, that the Pacific Coast has had an entry, and the first time the races have been entered by reserve officers. Both Lients. Hamm and Lehr are Los Angeles men and both trained at Ross Field, Arcadia, Calif.

Other speakers of the evening were: Superior Court Judge Walter F. Gates; Councilman Cupid Sparks; Lieut. Joseph Sullivan, Adjutant 49th Balloon Group; Charles Kelly, Chief of the Pasadena Police Department; William Frye, Clover Field; Lieut. Benedict, Clover Field; Col. H. B. Hersey, aide to Col. Frank P. Lahm in winning the first Gordon Bennett Balloon Race; William Fox, Commodore of the Long Beach Aero Club; Dr. T. C. Young, president of the Western Aero League; Major John D. Carmody, Army flyer; Lieut. George Harrison and Roy Knabenshue, pioneer balloonist.

#### SAN FRANCISCO

THE first general meeting of the San Francisco Chapter since its organization was held on March 26, and attended by 68 members. The membership of the chapter is constantly increasing and has now reached 135.

The following are the officers of the San Francisco Chapter: president, C. W. Saunders; vice-president, James Otis; 2nd vice-president, F. T. Letchfield; secretary, Dr. Sterling Bunnell; treasurer, Philip H. Parchin

#### GUAM

A NEW chapter, with twenty-five charter members, was formed at Guam on January 2. The officers will be elected as soon as the charter is received. What this little island in the middle of the Pacific can do, can certainly be done by any community in the United States and all should be urged to follow this inspiring lead.

#### DAVENPORT

THE Davenport chapter is preparing for an Air Mail celebration on May 12, when the Chicago-Dallas air mail service starts. At the meeting on March 31, a traftic manager of the National Air Transport, Inc., who are to operate the route, was the speaker.

Ralph Cram, the progressive Governor for Iowa announces that "Whenever anybody who can talk interestingly on aviation is in or near Davenport, I can place them at a local club practically any day of the week."

#### LITTLE ROCK

THE 1926 National Balloon Races, the winners of which will compose the American team for the International Balloon Races to be held in Belgium, May 30th, start from Little Rock at five p. m. on April 29th, and will be followed on April 30th by the largest air meet ever held in that section of the United States. This air meet, which is sponsored by the Little Rock Chapter, will be attended by many men prominent in aviation, including Major General M. M. Patrick, Secretary of War Davis, Orville Wright, Major E. V. Rickenbacker, Edsel Ford and many others.

A "Visiting Aviator Card" has been sent

by the chapter and the Chamber of Commerce to each officer and mechanician of the Air Services extending special courtesies.

Little Rock has one of the finest air ports in the country, comprising nearly 125 acres of land, and equipped with excellent hangars. On it are the warehouses of the Air Intermediate Depot housing millions of dollars' worth of Liberty motors and other equipment. It is the home of the 154th Aero Squadron, Arkansas National Guard.

The program on April 29th will include an exhibition of all types of military and commercial planes; parachute jumps; stuntflying; demonstrations of cotton-dusting, combat flying and group formation.

On April 30th there will be exhibits of airplanes, motors and accessories; stunt flying, parachute jumping and demonstrations; the National Guard airplane races; commercial plane races, limited to planes with motors not to exceed 100 h.p.; and a free-for-all race for all sized commercial and military planes and motors.

#### NATIONAL ELIMINATION BALLOON RACE

LITTLE ROCK, ARKANSAS, APRIL 29, 1926

Pilot	Aide	Entrant	Balloon
Walter A, HammRol	bert P. Lehr-	-Walter A. Hamm	"Goodyear,
		Los Angeles, Cal.	Southern
			Calif."
John A. BoettnerHe	rburt W. Maxson-	-Akron Chapter N. A. A	"Akron
		Akron, Ohio	N. A. A."
S. A. U. Rasmussen-Ed	ward J. Hill	-S. A. U. Rasmussen-	Not given
		Detroit, Mich.	
Herbert V. Thaden-Cha	as. David Williams–	-Detroit Flying Club-	"Detroit"
		Detroit Aviation Society	
W. T. Van Orman—Wa	alter W. Morton-	-Goodyear Tire & Rubber Co.	"Goodyear
		Akron, Ohio	IV."
Lt. J. F. Powell-Lt.	James F. Early-	-U. S. Army Air Service-	"Army"
		Phillips Field, Md.	
Lt. Wm. A. Gray——Lt.	Rowland Kieburtz-	-U. S. Army Air Service-	"Army"
		Langley Field, Va.	
Capt. H. C. Gray——Lt.	Douglas Johnston-	-U. S. Army Air Service-	"Army"
		Scott Field, Ill.	
Capt. L. F. Stone—Ca	pt. Guy R. Oatman-	-U. S. Army Air Service-	"Army"
		McCook Field, Dayton, O.	



Little Rock, Ark., Airport, starting point of the 1926 National Balloon Races.

# AEROPLANES—FLYING BOATS—MOTORS—SUPPLIES

All parts for JX4D, Canuck, Standard, OX5, OXX6, and many Fiat, Le Rhonc, Lawrance, Hispano, Liberty and HS parts.

Cotton or linen covers all made up for JN4D, Canuck and Standard. Gov't specification mercerized cotton cloth, 65c yd. or 65 yds. or more 57½c; linen, 80c yd.; linen scalloped tape, 7½c yd.; 3" scalloped cotton tape, 8c yd.; 2½" scalloped cotton tape, 8c yd.; 2½" scalloped cotton tape, 8c yd.; 2½" plain, 4c yd.; 1" plain, 3c yd.; ½" plain, 4c yd.; 1½" reinforcing tape, 6c yd.; unig-rib linen cord, 1c yd. or 83.50 per lb.; linen thread, 50c spool or 34 per dozen; double-pointed 10" needle, 40c; cured, dozen; dozen;

Five gals, new nitrate dope in dandy can, \$10 or 50 gal, barrel, \$80; 5 gals, good acetate dope, \$9 or originally 50 gal, drum, \$55; Acrospar varnish, \$3.25 per gal, or 5s at \$3; Valspar varnish, \$6.50 gal, or 5s at \$5.50; yellow or green pigmented dope, \$3.50 gal; pigmented dope thinner, \$2.50; acetate dope thinner, \$2.40; nitrate dope thinner, pigmented dopes in all colors and varnish enamels in many colors; also TYTWO dope. The best indication of satisfaction is the many repeat orders received for dope.

Fireworks for exhibition flights: Friction flash bomb, \$4; flag bomb, \$3.75; huge smoke trail, \$3.50; spectacular night plane display with instructions (lasts about 14 minutes) \$36; dragon shells for night, \$3.50; red torches (last about twenty minutes) \$1.25.

New JN4D, \$1450; slightly used JN4D, \$1275; good used Canuck, \$1075; dandy Oriole, newly covered, less motor, \$1375; or with new C-6 motor, \$3175; new JI Standard less motor, \$1030; high-lift 3-place biplane, new, with splendid factory overhauled C-6 motor, fast climb, very stable, 120 m.p.h., \$3000; SPECIALS: Splendid used 3-place Standard equipped with 160 h.p. Mercedes motor equipped with 185 h.p. high-compression pistons, all set up in West, priced for quick move, \$1075; 1922 OX5-motored Waco, \$850.

Special: New Liberty 12-cyl. 400 h.p. motor only \$1975; splendid used Liberty, \$1175; splendid used 150 h.p. Hispano, \$565; spendid used 180 b.p. Hispano, \$625. Very little total time on my used motors. New OXX6, \$600 or Navy-overhauled, small total time, \$375; new OX5, \$450; very slightly used OX5s, \$350; OX5 needing overhaul, \$200; new 80 h.p. Le Rhone, \$125; new two-cyl. 28 h.p. Lawrance, \$125; 130 h.p. Clerget, \$200; slightly used 6 cyl. 160 h.p. Beardmore, \$300. Used 10-cyl. 100 h.p. Anzani, \$225; used 80 h.p. Le Rhone, \$75; new 6 cyl. 45 h.p. Anzani, \$275; 100 h.p. Gnome, \$135.

New Zenith carburetor for OX5, \$12.50; for OXX6, \$15; very slightly used, OX5 carburetors, \$10; carburetor float, \$1; needle-valve, 25c; needle-valve dust or water cap, 20c; compensating jet (100-110), 50c; main jet (100-120), 50c; lower plug for compensating or main jet, 50c; union body for gas hose to carburetor, 70c; carburetor jet wrench, 50c; fresh Peerless gas hose, 45c ft.

Leather breecbes, \$12; reversible leather flying coat, \$18.50; tan leather helmets, corduroy-lined, \$3.75; chamois-lined, \$5; eiderdown-lined, \$6.50; fur-lined, \$12.50. ACE large tough curved lense widevision goggle, \$10; French goglette, \$4; wide-vision curved goggle, \$1.75; face-mask goggle, \$3, NON-SHATTERABLE goggles: NAK wide-vision, \$4.50; Jumbo oval, \$2.57; Tiplex wide vision, \$4.50; Jumbo oval, \$2.50. Gosport sets with o.d. helmets, \$12.50.

Dandy oil or water temperature gauges (thermometers) with tubing, \$7.50; climb or banking indicator, \$2.50, or electric-lighted type, \$5; 8-day clock, \$10; 120 lb. oil gauge, \$2.50; 10 lb. air gauge, \$1.50; Van Sicklen tachometer, \$15; Johns-Mansville tachometer, \$16; shaft for either, \$8; adapter, \$5; Warner tachometer, \$7.50; Warner shaft, \$6.50; airspeed meter, only \$8.50; or with venturi and tubing, \$15; magneto switch, \$2; dual magneto switch, \$2.50; compass, \$10; JN4D gas tank with gauge, \$15; without gauge, \$12; JN4D gas tank gauge, \$5, or ones with float slightly jammed but serviceable, \$3.50; rotary map case (rotates as trip progresses), \$3.50; combination writing desk and map case, \$3.75.

JN4D wing, upper or lower, \$90; Canuck or Standard lower wing, \$90; Standard upper wing, \$110. All these wings in dandy condition; Canuck lower wing, unused, but patched, \$75; wing hinge-pin, 50c; wing strut with socket, \$4; wing-rib cap-stripping \$4", 4c ft.; or \$4", 2½c ft.; round bracing, 7c ft.; wing beams, \$9.50; center section beams, for Canuck or Standard, \$2.50; bracewire terminal, 35c.

SPECIALS: JN4D control cables all complete for ship: for rudder, \$3; for clevators, \$4; for ailerons, \$15; aileron pulley with bearing and housing, \$2.20; ferrules, 3c; thimbles, \$c; fusclage hard wire, 3c it.; "feithic cable, 7c it.; 5732" flexible cable, 6c it.; 57,32" extra flexible ior controls, 8c it.; 0X5 Burd high compression piston ring, 15c; oversize, 20c; 0XX6, 36c; 0X5 biston-pin, 50c; 0XX6, \$1.10. OXX6 cylinder, \$12.50; 0XX6 piston, \$5.50; 0XX6 cable wiring assembly, both sides, \$12; for OX5, \$8; 0XX6 crank case: lower hali assembly, \$35; upper hali with studs, \$60; 0XX6 crank-shaft, \$20; 0X5 camshaft, \$10; rocker-arm support stud, 10c; intake stud, short, 15c; long, 20c; long cylinder tie-down rod, 60c or \$16 per set; tie-down yoke or spider, 25c; individual exhaust stacks for OXX6, \$1 each or \$7 per set; Standard wing-strut pin, 10c.

Dandy longeron for either ship, front or rear, \$3; tail skid with metal shoe, \$4; rear half Canuck or Standard fuselage, \$85; JN4D engine top cowl, \$8.50; nose cowl for standard, \$6.50; good used engine side cowl, JN4D, \$8.50; bottom cowl, front, JN4D, \$3.50, rear, \$1.50; foot or rudder bar for Canuck or JN4D, \$1.40; foot-bar base, \$2; rubber handle ior pilot stick, \$8c.; nose plate, \$10; JN4D or Canuck radiator (slightly jammed on top but tested for leaks), \$20, or unjammed, \$25; OX5 Standard radiator, \$25; new Hall Scott 125 h.p. side type, \$35; radiator for 150 Hispano, used but good, \$75.

Bosch booster magneto, \$12.50; Canuck or JN4D safety belt, \$4.50; windshield, \$5; seat rail support, \$1.25; JN4D gasoline tank cradle or mounting, \$7.50; gas sump assembly, including shut-off, \$3.50; Bosch ZH-6 6-cyl, magneto, \$45; castor oil for rotary motors, \$2.25 per gal.; plywood in all thicknesses and sizes can be supplied. DH leathers back wicker seat, \$4; AC spark plugs for Curtiss or Hispano, 25c; for Liberty, 40c.; mica spark plugs (specially good), for Curtiss, Hispano or Liberty, 50c; metal or bamboo wing skid for JN4D or Canuck, \$1.50; bamboo for Standard, \$2.

DH wheel, \$8.50, or with streamlines, \$11.00; DH casing, \$7.50; tube, \$2, or \$4 for newly mfd.; DH adapters for Jenny or Standard, \$7.50; 26 x 4 wheel with streamline, \$7; less streamline, \$5.75; good service-able condition, \$4.50; dandy 26x4 casing, \$10; slightly used, \$5; moderately used, \$3.50; newly mnfd. tube, \$2.50; 26x4 Ackerman spring steel spokes wbeel, \$2.50; 20x4 wheel, \$5; 20x4 cord casing, slightly damaged, \$10; war surplus tube, \$1.50, or newly mnfd., \$3; good shock absorber cord, ½" striped, good, \$7½c yd.; new, fresh, ½", 55c yd.; fresh, \$%", 75c yd.

OX5 new propellers all dandy coudition: CAL oak, untipped, \$12.50; Paragon, untipped, \$12.50; Paragon, variable pitch, \$15; Hardman toothpick, copper-tipped, \$20; Flottorp, copper-tipped, \$20; Hartzell D5000, copper-tipped, \$30; OX5 pusher, metal tipped, \$35. OXX6 new propellers: Flottorp, metal-tipped, \$37; Starr, metal-tipped, \$25; Hartzell Liberty, metal tipped, \$40; Starr, metal-tipped, \$25; Curtiss-Reed duralumin propeller for OX5 and OXX6, \$250.

Propellers for: 80 h.p. Le Rbone, \$15; Hall Scott A7A, \$15; Curtiss V-2, \$35; 130 h.p. Clerget, metal-tipped, \$35; 100 b.p. Gnone, metal-tipped, \$30; 160 h.p. Gnome, metal-tipped, \$35; 150 h.p. Hispano pig skin tipped toothpick, \$30; linen-tipped club, \$45; Hartzell metal-tipped club, \$65; for 220 Hispano, \$37.50; 400 b.p. Liberty, \$35; 400 b.p. Liberty, \$4-blade, slightly used, \$40; Lawrance 28 b.p., \$15.

Aerial camera, type L with many plate bolders, (takes picture 4" x 5") slightly used, excellent condition, in original case, \$100; F boat hoisting-hooks, \$12.50; F boat safety-belt, used, \$2.25; HS boat safety-belt, used, \$3.75. Dep. control assembly, \$17.50; solder flux, 15c per stick; Canick tail skid fender (to protect fabric) \$1; bumper, \$1; tail skid and sboe for Oriole, \$6.

Tools: For OX5: ½" or 5/16" long socket wrench, 85c; 5/16" long crowloot wrench, 90c; propeller hub puller assy., \$2.50; crankshaft nut wrench, \$75c; prop bub nut wrench, 90c; magneto wrench, 25c; water pump pack nut wrench, 50c; thrust bearing nut wrench, 50c; double-end spark plug wrench, 50c; heavy screw driver, long, 60c; complete set OX5 tools, \$11.50; Hispano cyl. stud nut wrench, \$3.85; Hispano valve feeler gauge, 95c.

Hispano model A, I or E oil or piston ring, 50c; wrist-pin, \$1.25; model A connecting-rod slightly used: inner, \$6.50, outer, \$8; piston, slightly used; \$7.50; 220 Hispano water pump, \$25; beavy intake valve, \$2; heavy exhaust valve, \$2.50.

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#### NEW YORK

SERIES of weekly radio talks on acronautics, through the courtesy of Bruno and Blythe Associates, are being broadcasted from station WEBI. These talks, by such speakers as Casey Jones, Cy Caldwell, George McLaughlin and J. E. Whitbeck, have proven valuable in arousing interest in the activities of the New York Chapter.

A farewell party was tendered to Lieut. G. O. Noville, treasurer of the chapter, the night preceding the sailing of the Chantier for Spitzbergen. Lieut, Noville is the flight and fuel engineer of the Byrd Arctic Expedition, and bears with him the best wishes of the chapter members.

A number of public meetings will be held preparatory to a membership drive to put the New York Chapter on the banner list. At the first, to take place in the early part of May, Congressmen Perkins of New Icrsev and Prall of New York will talk on the findings of the Lampert Committee.

Plans are also under way to hold a field day at one of the nearby flying fields. Announcement of the date will be made at the next meeting.

#### LANSING

THE Lansing Chapter has opened a class in elementary aviation and ground work. A series of lectures have been prepared and everyone interested is invited to attend. The lectures are given by flyers and such authorities as Mr. Seeley of the East Lansing Weather Bureau, who gave a talk on meteorology. There have been three lectures to date, and over sixty are enrolled in the class. The increased interest on the part of the members of the chapter by giving them all something definite to do is already noticeable

Petitions have been received from the East Lansing High School and Michigan State College to give the same course there.

Many of the Department Heads of the Michigan State College are in favor of adding a course in Aeronautical Engineering to the regular curriculum this fall. The chapter hopes also to be instrumental in establishing a flying field at the State Col-

An effort is now being made to establish an East Lansing Chapter.

#### DISTRICT OF COLUMBIA

HE April meeting and luncheon of the District of Columbia Chapter was held at the Army and Navy Club, April 23rd, at which Postmaster General Harry S. New was the guest of honor. Members of the Contest Committee and Board of Governors, who were meeting in Washington, were also guests of the chapter.

#### BANGOR

NEW chapter has been formed at Bangor, Maine. The following officers were elected: president, Edward R. Godfrey: vice-presidents, Garrett D. Speirs, Lieut, Robert W. H. Lowell: secretary. Lieut, Fred R. Rowell: treasurer, E. Y. Eláridge.

#### THREE U.S. SCHNEIDER CHP DEFENDERS

THE Bureau of Aeronautics, having been authorized by the Secretary of the Navy, will make available three airplanes for entry as the United States defenders in the Schneider Cup Airplane Race to be held at Norfolk, Va., during the week of October 24 to 31. These three airplanes have, therefore, been entered by the National Aeronautic Association to defend the Schneider Cup against the three seaplanes entered by the Aero Club of Italy.

#### DES MOINES

THE Des Moines Chapter mourns the loss of one of their most enthusiastic members, Raymond C. Fisher, veteran Iowa aviator, who died recently as the result of an accident.

Lieutenant Fisher was formerly an army aviator and also served with the forest patrol and, at the time of his death, operated one of Iowa's largest airports and flying schools. He was a member of the Board of Directors of the chapter and one of the leading men in aeronautical circles.

Lieutenant Fisher received his preliminary training under Captain Lowell H. Smith, round the world flyer.

He was buried with full military honors at Avon, Iowa, April 14.

prices on airplanes are now at their lowest. A small deposit on any of our airplanes will hold same for spring delivery. We believe the prices on airplanes are now at their lowest. A small deposit on any of our airplanes will hold same for spring delivery. We expect a sharp advance in prices very soon.

We still have plenty of Standards, Jennies, Canucks, Orioles, D. H.'s with Liberty motors, Spads less motors, T. M. Scouts with and without motors. A large number of these airplanes are set up, test-flown and ready for immediate fly-away delivery.

Come and take your pick.

Come and take your pick.

New Standard J-1

Airplanes

These airplanes come complete with tools and instruments and the front seat is built so as to accommodate two passengers. These needed, the new document of the controls, new wires, new struts, new fittings, new instruments were installed to the new document of the new document of the controls, new wires, new struts, new fittings, new instruments were installed to the new document of the n

airplanes have where needed.

No bond required and no charge for breakage

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We guarantee to solo our students regardless of the number of flying hours required. We also furnish planes at very reasonable rates for those who wish to qualify for the F. A. I. pilot's certificate and we maintain an employment agency for our graduate pilots. The flying school of the Robertson Aircraft Corporation is one of the oldest and best known in the United States. Our instructors are ex-army aviators and are mail pilots with wide experience. Our training equipment is the best obtainable. In over eight years of operation our students have never damaged a ship in their solo flights.

The flying field is approximately six miles from St. Louis, and is easily accessible by railroad, street car and hard-surfaced roads. It is the largest and best privately owned field in the country. The International Races of 1923 were held there. Mail planes arrive and leave daily.

Our course requires about two weeks, depending on the individual, and after its completion the refinements of the art can be gained only from experience. Commercial aviation is a rapidly growing industry. Don't delay! Enroll now!

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# WITH the SERVICES

#### CRISSY FIELD NOTES

By LIEUT, WILLIS R. TAYLOR

C RISSY FIELD, during the month of March, finished most of its Annual Aerial Gunnery practice. First Lts. C. V. Havnes and J. W. Benton, the two officers who made the highest scores, will represent Crissy Field in the National Aerial Gunnery and Bombing Matches, which will take place at Langley Field, Va., on May 5th,

Captain John P. Beeson, M.C., Flight Surgeon, left on March 5 for Hawaii. A formation was sent out from the field to fly over the transport to honor Captain Bee-

son's departure.

First Lt. C. V. Haynes, pilot, and Major J. Y. Chisum, observer, flew to Clear Lake, California, for the purpose of talking to the citizens and residents in that vicinity regarding the establishment of a landing field. At a later date it was decided by the Town of Lakeport to vote on a bond issue for the establishment of a Municipal Landing Field.

First Lt. John R. Glascock, pilot, and Major I. Y. Chisum, observer, made a crosscountry trip to Rockwell Field, San Diego, California, for the purpose of making ar rangement for the Summer Training Camps.

Colonel F. P. Lahm, Corps Area Air Officer, and First Lt. H. A. Moore, observer, visited the National Guard Flying Field at Griffith Park, Los Angeles, California, of which Lieut. Leslie P. Arnold is in charge. Lieutenant-Colonel Lalım made an official inspection of the Field and commended Lieutenant Arnold on its administration and con-

The following officers flew to the Presidio of Monterey for the purpose of conducting a problem with the 11th Cavalry: Major Delos C. Emmons, First Lieutenants C. V. Haynes, A. W. Marriner, Eugene B. Bayley and Willis R. Taylor, Photographic Officer. The problem, which included twoway radio communication and the picking up of written messages from the ground by an airplane, was accomplished very successfully. All phases of the problem were worked out and accomplished on time and without a single failure. The work of the Air Service in the problem was commended very highly by Colonel L. B. Kromer, who is in command at the Presidio of Monterey.

First Lieut. Willis R. Taylor and First Lieut, C. C. Wilson, observer, made several trips to Rockwell Field, San Diego, and return, via Bakersfield, for the purpose of checking the San Diego-Bakersfield, Bakersfield-San Francisco Airways map strips.

Lieutenant William R. Sweeley, who established an unbeaten record for a dawn-todusk flight from Crissy Field to Salt Lake City and return in April, 1925, returned to duty at Crissy Field from McCook Field. where he had been following a course of instruction in aviation since last October. During the absence of Major D. C. Emmons from Crissy Field for several months last year Lieutenant Sweeley was acting commandant of the air station.

Last but not least, Captain William C. Ocker, one of the oldest flying officers in this country, if not in the world, on April 9: turned up out of clear sky with a bride. This will be good news to all of Bill Ocker's friends in the Service.

#### N. Y. NAVAL RESERVE AIR STATION MOVES

A FTER several years of operation under difficulties due to poor facilities and naturally bad water conditions at Fort Hamilton, the New York division of the Naval Aviation Reserve received the welcome order for removal to the old Naval Air Station at Rockaway, L. I. At Rockaway, water conditions are excellent and there is a fine beach equipped with concrete runways which were built during the war.

Lieut. "Ezra" Kendal, in command, expects to be in operation within a very short time as there is a large class of reserve students due to begin training on May 1st. Advanced students will complete their training at Hampton Roads, where classes were started on April 15th.

#### NAVAL AIRCRAFT BILL PASSED BY HOUSE

THE naval aircraft bill, providing \$85,-000,000 for a five year aircraft construction program, and establishing a permanent naval air policy for the United States, with an ultimate regular fleet of 1,000 airplanes and two airships, with an experimental metal-clad ship, was passed by the House of Representatives on April 12th. The vote was 297 to 39.

#### NAVAL AIRMEN DINE

A GET-TOGETHER stag dinner was given on April 16th by the officers of the Bureau of Aeronautics at the Army and Navy Club, in honor of Admiral William A. Moffett, Cnief of the Bureau of Aeronautics. Forty-one officers were present. Among the speakers of the evening were: Admiral Moffett, Comdr. John Rodgers, Captain Emory S. Land, Comdr. Kenneth Whiting, Comdr. N. H. White, Jr., Comdr. H. C. Richardson, Comdr. E. E. Wilson, Lt. Comdr. R. R. Paunack, Lt. Comdr. M. A. Mitscher, Lt. Comdr. E. W. Spencer, Major E. H. Brainard, Comdr. E. F. Stone, Lt. Comdr. Davis, Lt. W. M. Dillon, Lieut, H. F. Councill, Lieut. A. I. Price, Lieut. R. A. Ofstie and Lieut. T. P. Jeter. Lieut. Frank H. Conant, 2d, acted as toastmaster.

This very successful dinner is the first of a series that have been inaugurated by the Bureau of Aeronautics. The Admiral, in the closing speech of the evening, stated that the evidence of such close cooperation and good feeling among the officer personnel of the Bureau could not help but promote the efficiency of the organization.

#### BALLOON MEN MEET

M ORE than 50 active, reserve and former officers of the Balloon Section of the Army Air Service assembled at the second annual reunion and banquet of the organization in New York City, March 27. Similar reunions were held simultaneously for officers in the Middle West at St. Louis and officers on the West Coast at Los An-

At the eastern dinner it was proposed to effect a permanent organization to pernetuate the traditions and ideals of all lighterthan-air officers in the World War. Of several plans of organization proposed the most favorably received was a suggestion that the national organization be patterned after the Society of Cincinnati, the noted post-Revolutionary organization, in which membership is inherited by the lineal descendants of the original members. The selections of a name and the details of organization were left to a committee to be named by Colonel Charles deF. Chandler, chairman, and the permanent organization will be effected at the next annual dinner. Former balloon officers who are eligible should send their names to David Q. Hammand, 150 Nassau Street, New York City.

#### ARMY FLYERS BREAK RECORD IN HAWAII

A PREDICTION was made less than fifteen years ago that airplanes would never fly successfully in Hawaii. Dangerous "air pockets" were claimed to be the prohibitive factor-a condition at that time declared to be much worse than on the main-

Recently, between dawn and dusk, four Army aviators, three commissioned officers and one non-commissioned officer, made a complete circuit of the Hawaiian Archipel-

In addition, the planes hung up a new speed record for flying between Luke Field, on the Island of Oahu and Hilo, on the Island of Hawaii, a distance of approximately 225 miles, most of it being over water, in two hours and four minutes.

There were two planes in this record making flight. Plane No. 1, from Wheeler Field, located 20 miles inland from Luke Field, on the Schofield Barracks Reservation, was piloted by Lt. Everett S. Davis, and carried Sgt. Benjamin Dorcy. Plane No. 2, from Luke Field, was piloted by Capt. Clyde V. Finter, and carried Maj. R. E. M. Goolrick, department air officer and flight commander.

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# WITH the INDUSTRY

#### FLINT AIRPORT

A NNOUNCEMENT has just been made of the organization of the Flint Aero Association at Flint, Michigan, which has as its general purpose the promotion of commercial aeronautics. The officers of the association are: S. S. Stewart, president; G. R. Jackson, vice-president; C. W. Otto, secretary-treasurer; E A. Goff, Jr., manager. The directors are: D. D. Aitken, E. W Atwood, J. E. Burroughs, I. H. Crawford, A. M. Davison, Mgr. P. R. Dunnigan. H. J. Mallory, H. C. McClure, R. H. Mulch, Dr. Chas. O'Neil. E. R. Palmer, M. Rosenblum, Guy Selby, J. R. Taylor, J. L. Transue and John Windiate.

The membership of the organization has been growing very rapidly and indications are that the total membership will be in excess of 3.000 before May 1.

Preparations are well under way for an air meet to be held June 4, 5, and 6. The demonstration will be financed entirely from the treasury of the association, and will be open to the public with no gate admission charged

The management of the Flint Air Meet will be in the hands of E. A. Goff, Jr. Mr. Goff managed the air meet at Battle Creek, Michigan, last year which was an unqualified success from every standpoint. Approximately seventy-five thousand people witnessed the Battle Creek meet, and the contestants were unanimous in their praise of the consideration extended them. All prize money was paid to the pilots within twenty-four hours after the close of the

At the Flint Air Meet the purse for each contest is \$500, to be divided into eight awards proportioned according to place, and will be paid at the close of the meet. All ships entered will be provided with gasoline and lubricating oil gratis while in attendance.

There will be several contests, among them a Fly-to-Flint Race, which is similar to the old, established On-to-St. Louis or On-to-Dayton Race; Speed Races; a Dead Stick Landing Contest and a Pony Express Race. The Pony Express Race emulates the old time express rider. The pilots are required to land at the completion of each lap, shut off their motors, personally exchange a parcel, which they have been carrying, with the judge, and resume flight. This race was conceived for the Battle Creek Air. Meet, and was used at the Ford Airport during the Ford Reliability Tour.

An exhibition tent is being provided on the field for the manufacturers to exhibit their motors, parts and accessories. A number of prominent manufacturers of aircraft and aircraft accessories have already signified their intentions of participating, and it is hoped that every make of aircraft now under production will be represented.

#### ROSENCRANS FIELD

ST. JOSEPH, Missouri, has been chosen as route headquarters for power plant maintenance of the National Air Transport whose Dallas - Ft. Worth - Chicago air mail service opens on May 12. The excellent landing facilities and complete equipment of Rosencrans Field, the only city-owned field on the route, was an important factor in making this decision

Rosecrans Field's area is nearly 150 acres. At the extreme northern end of the field is the hangar, an all-steel fireproof structure 140 by 80. The hangar will house 16 planes. On the second floor of the building will be National Air Transport storerooms, in which will be kept complete motor and plane

Captain R. G. Erwin, commanding officer of the Seventh Corps Area, Major E. L. Tinker and E. P. Lott, transportation manager of the National Air Transport, Inc., recently inspected the field, and conferred on flying arrangements with Carl Wolfley, vice-president of the National Aeronautic Assn. and president of the St. Joseph Chapter, Harvey Block, N. A. A. Governor for Missouri, Ralph Wishon, field and power plant superintendent of Rosencrans Field and M. M. Levand, publisher of the Gazette, all air enthusiasts who have done much toward making St. Joseph one of the foremost

Besides the National Air Transport planes which will be at Rosencrans Field, there are now three other planes at the field, owned by the Standard Aircraft Company of which George O. Wells is president. These ships and two others not yet set up will be used by them this season for commercial flying. Lou Gomer, Karl Kummer and T. B. Olsen will be the company's pilots.

Ed Tracy, owner of the St. Joseph western league baseball club expects to get another plane this summer. Two of his planes were destroyed in a fire at his hangar on the old Lake Contrary field last winter. L. F. Meister, of the Plymouth Clothing Company will also buy a ship this summer.

#### DETROIT NOTES

ITH the coming of spring, the pilots are rolling out their ships and tuning up their motors, full of optimism for a greater-than-ever commercial season.

Pilot Taylor has completed his five-place Salmson motored Standard. This ship is of the semi-cabin type with the four passengers facing each other and the pilot using the back cockpit. It is a very fine looking job and a masterpiece of workmanship.

Taylor has also leased the 160 acres known as Northwood Field and invited all visiting pilots to stop over at his field. It lies directly 16 miles north of Detroit's City Hall and is the nearest field to the northern section of the city.

Alfred Verville has six of his airsters nearing completion. His Wright Whirlwind job built for E. I. Dupont will be ready

The Detroit Flying Club has appointed a radio committee to cooperate with the amatcur radio operators in an attempt to get weather forecasts and reports over the course that an airplane may be covering in a cross-country hop.

On May 8th an indoor model airplane contest will be held and an attempt made to establish a world's record for these miniature aircraft. Jack Loughner has a record of 115 seconds that he hopes to better, and thereby claim the world's official indoor record.

The Hess Airplane Company has leased a two-story building and are building six OX5 jobs.

Eddie Stinson is becoming quite an expert after-dinner speaker. Plans are being laid to put his Stinson-Detroiter in production.

The Detroit School of Aviation has 45 enrollments and expects to train sixty or more pilots this year. The school has outlined a series of lectures to be given at weekly intervals by men prominent in aeronautical circles including A. R. Verville, Eddie Stinson, Glenn D. Angle, Eddie Hamilton and W. A. Mara.

The Michigan National Guard Aero Squadron has been tentatively organized and expects to get Federal recognition and funds in the near future.



National Air Transport headquarters at Rosencrans Field, St. Joseph, Mo.

#### GAMMETER ON LEAVE

JOHN R. GAMMETER, who has been consulting engineer at the B. F. Goodrich Rubber Company factories for several years, has been given leave to devote more time to personal affairs. Mr. Gammeter will still act in a consulting capacity and will be practically in daily contact with the engineering division, but the arrangement will relieve him of pressing activity in engineering matters and enable him to have more time outside for personal interests.

Mr. Gammeter has been active in Goodrich mechanical developments for thirty years and ranks today as one of the most widely known engineers in the rubber industry. He has been directly responsible for many innovations in rubber goods manufacture and is credited with nearly 200 patents representing practically every field of rubber manufacturing activity.

During the war Mr. Gammeter took up the study of aeronautical development and the Gammeter valve, widely used today in lighter-than-air ships, was a result.

#### HOUSTON ITEMS

T HE construction of Houston's new airport, which was started in February, is showing considerable headway. A 70 by 100 foot hangar is about completed, much of the ground has been cleared and levelled and a 600 foot circle is being marked off and graded. Four-way landings will at all times be pos-



John R. Gammeter

sible on this large field located just opposite the south end of Main Street, 5 miles from the centre of the city, on the Old Spanish Trail, the main highway between Houston and San Antonio. This field is being built by J. C. Tips, Jr., and Nolan E. Wells to meet the needs of local visiting pilots, the old facilities having proven inadequate. Announcement of the completion of this new airdrome will be made shortly.

The Super Rhone Engine & Flying Corporation have completed satisfactory tests of the Super Rhone engine installed in the Swallow plane, at the plant in Wichita, Kansas. Charles E. Quick, designer of this engine and chief engineer of the Super Rhone Corporation, has just returned from Wichita where he assisted in the tests. This corporation is now engaged in the construction of a fleet of ten "Quick Dusters" to be used in crop-dusting.

Tips & Smith, Inc., manufacturers of the Super Rhone engine, have moved their shop to the new building recently completed at 1224 Summer Street, Houston, Texas, where increased facilities for the construction of their engine have been installed in order to quicken the production to meet the demand. Shipments of this engine have recently been made to Ryan Airlines, San Diego, Calif., Swallow Airplane Mfg. Co., Wichita, Kansas, and Rankin Flying Service, Vancouver, Washington, in addition to individual buyers.

During the past year this firm has shipped over 400 aeronautical engines to all parts of the world, the most recent order being for 100 engines which were shipped to the Siamese Air Service, Bangkok, Siam. This progressive little kingdom, in addition to the purchase of over three hundred aero engines in the past year from Tips & Smith, Inc., purchased two carloads of spare parts for same, and five carloads of engine repair and construction machinery for the aero repair shops in Bangkok, where maintenance shops are operated for the three principal airlines operated by the military service for civilian, military and postal use in connecting the eastern and western frontiers with the city of Bangkok.

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# SELLING AERONAUTICS TO AMERICA

W HEN the Sikorsky transport S29 rolled her wheels on the ground at Roosevelt Field, Westbury, L. I., on April 18th, and was taxied to her hangar by Captain Roscoe Turner, the pilot in command, one of the greatest efforts in the history of commercial aviation in America was brought to a successful ending. In one month the big twin-motored air liner had covered three thousand miles of country, taken up over three hundred and fifty passengers, and transported freight and express valued at approximately \$50,000.

On March 17th, Captain Turner with O. P. Graff "gave her the gun" and started South with a shipment of silks for Macy's consigned to a representative in Atlanta. From there they flew to St. Louis where S. M. Curlee of the Curlee Clothing Co. awaited them with six members of his eastern sales organization, who were anxious to avail themselves of air transportation. The Sikorsky took off from St. Louis, on April 9th, carrying eleven passengers and baggage. Stops were made at McCook Field, where the Army experts looked the plane over, at Harrisburg, Philadelphia and New York to land the salesmen in their respective territories.

The machine was serviced at Roosevelt Field and took off for Albany carrying thirteen passengers and baggage. From Albany to Westfield, Mass., and thence to Boston.

From there Capt. Turner took the ship to

Portland, Maine, and adjacent cities on which trip Daniel Rochford, of the Boston Transcript and Boston representative for Aero Digest, accompanied the Captain as navigator. Another stop at Hartford and then home. At every port of call, many enthusiastic people availed themselves of the opportunity of inspecting and riding in the big ship.

# AMERICAN SCHOOL OF

THE American School of Aviation was founded in 1916 to teach the basic fundamentals of aviation by the home study method. The school has been in continuous operation since its organization and its enrollments have increased from year to year. Its students and graduates are to be found not only throughout the United States, Canada and Mexico, but in nearly every foreign country in the world.

The school does not teach flying. Its training, however, is valuable to the young man, who is ambitious to become a flyer, before he begins his flying lessons. The lesson material is always kept up-to-date through the aid and coöperation of trained and capable authors.

#### KITES IN THE ARCTIC

THE Byrd Arctic Expedition carries with it two kites, one five-foot and the other seven-foot, designed by Samuel F. Perkins of Boston, Massachusetts.

Not only will these kites be valuable as signals in time of distress but by elevating the radio aerial three or four hundred feet into the air, its transmitting powers will be greatly increased.

Mr. Perkins received his early kite training at Blue Hills Observatory where the kite system now used by the U. S. Weather Bureau was worked out.

#### FALLS CITY FIELD

THE 40-acre flying field secured by the Falls City Chamber of Commerce on March 24, one-half mile east of the city limits, is now marked and equipped with gas and oil storage facilities.

This is the first landing field to be established in southern Nebraska. The nearest other landing fields are St. Joseph and Omaha. It is eight miles west of the Missouri river, the natural course that aviators follow from Omaha to St. Joseph and Kansas City. It is hoped that the field will soon be given an official number on the air map.

E. W. Simpson, the enthusiastic chairman of the Chamber of Commerce Aviation Committee wants us to assure all flyers of a hearty welcome at the field.

A very successful aviation banquet was given by the Falls City Chamber of Commerce on April 14. Carl Wolfley of St. Joseph, Missouri, vice-president of the National Aeronautic Association, and Ray Page, president of the Lincoln Standard Aircraft Company of Lincoln, Nebraska, were the principal speakers.

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# ROBERTSON CO. DOES

THE yearly report of the Robertson Aircraft Corporation is indeed encouraging. The business done by them during 1925 amounted to \$113,564.60. Some of the larger items in this include: airplanes, \$48,982.50; airplane parts, \$22,705.30; motor parts, \$13,933; passenger rides and photographs, \$7,897; flying tuition, dope, varnish, and miscellaneous work amounting to the balance.

Due to the demand for advanced training they plan to enlarge their flying school during the coming season, having three separate and distinct courses. 76 students were graduated from this school last year, the majority of whom wanted advanced training, and with this new addition they hope to be able to take care of this demand.

Course No. 1 will be the regular primary training course,

Course No. 2 will be six hours of solo

work with an instructor.

Course No. 3 will be the advanced flying course, which will include all stunts known to aviation, cross-country flying, photography, dual instruction in Hisso Orioles and Liberty motored D.H.'s.

#### NATIONAL AIR RACES

THE greatest air show in the history of aeronautics is planned by the aviation committee of the Sesquicentennial—the National Air Races to be held in Philadelphia on Sept. 4th to 11th. They will be an important feature of the international exposition. Hollinshead N. Taylor is chairman of the aviation committee. Howard F. Wehrle of Kansas City, Mo., has been appointed managing director of the races. Efforts will be made to attract entries from all sections of the United States and abroad.

Civilian owners of commercial aircraft may enter their product in the annual flying

meet no matter what type or class it may be. Cash prizes aggregating \$30,000 have been put up by the local committee in accordance with the rules of the National Aeronautic Association.

#### CHICAGO FLYING CLUB

O NE year ago this club had its beginning with only five members and despite predictions to the contrary it has grown steadily and now promises to become one of America's greatest flying clubs. There are now over one hundred members, with many applicants for initiation.

It is the only flying organization of its kind, with a new and widely different policy.

The object is to popularize flying, as other sports have been popularized, by bringing together those who really desire to engage in flying for their own personal pleasure.

Despite the cold weather this winter there has been flying continually, and as many as fifty and more student members have flown in a single day.

They are now preparing to build airplanes, designed by club engineers for the purpose of having distinctive club-planes, and to open a shop where members may obtain ground training.

L. B. Coombs, chief engineer for the Western Airplane Corp., is president of the club; H. E. Rennacker, vice-president; S. I. Orris, secretary; E. L. Campbell, treasurer and counselor. William T. "Bill" Ensign is the recruiting officer. The field is on Irving Park Boulevard.



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#### NEW ENGLAND NOTES

By DANIEL ROCHFORD

S PRING has came and summer is caming! The other day in Boston Captain R. F. "Bugs" Raymond, well-known reserve pilot of Boston and a D. S. C. flyer overseas in the war, went swimming down Boston harbor way. Out of a Jenny, of course. The Army pulled the ship ashore and poured the water out and it is back on the gun lines with perhaps a salty taste in its mouth, but as good as ever. From the middle west, across the country, came flying Herr Sikorsky's big "Yorktown" with a load of clothing salesmen on their way to New England business. Also from the west, Wichita, to he exact, a heautiful new Travel-Air with Whirlwind motor came whining its way to its permanent home in Boston. Frederick Lothrop Ames, recent graduate of the Boston Airport Corporation's flying school, is the proud pilot-owner.

The month saw many enthusiastic meetings of air-minded. In New Haven the business men of Connecticut gathered at the Quinnipiac Club while such practical transportation men as C. C. Buckland of the N. Y. N. H. & H. Railroad declared that aviation was here today as a necessary transport facility. The Colonial Air Transport, Inc. with the Boston-Hartford-New York air mail contract have had their first delivery of planes and are ready to start flying the mails coincidentally with the operation of the National Air Transport, about May 12th. An elaborate celebration is planned

for the opening with the governor of Massachusetts, Alvan T. Fuller, sending a letter to Governor Trumbull of Connecticut and to Al Smith of New York. Army and Navy bands are to play at the field and a guard of honor of military and commercial planes will fly with the mail ship to Hartford where Connecticut guard pilots will take up the escort on toward New York.

At Squantum, outside Boston, the United States Naval Reserve Air Station has added another navy pilot to its list and is ready for its first group of pupils in June. Twenty-two naval flyers will be given the primary course at Squantum this summer preparatory to the final course at Hampton Roads next year and the reserve commission rating as ensign.

Down in Bangor a ground school of flying has been going on for two months and actual flying is scheduled to begin in the next fortnight. Hartford, as usual, is very active with the mail plans and planes thickening the aerial soup considerably. Springfield is being asked to consider an airport as is Worcester. Major Ira Longanecker, air officer for the First Corps Area, has started factories to putting town names on their roofs. Salem was the first Massachusetts town to respond.

New pilots checked out by the Army for Boston and vicinity included Lieutenant Charles A. Ross, just back from six months in Texas, Lieutenant G. Weighmiller, graduate of Brooks, Flight Sergeant R. Cobb of the regular Army, formerly with the Navy at Squantum but since then trans-

ferred to the Army and graduate of Texas. The new navy pilot is Lieutenant Walter C. Green who becomes executive officer at Squantum for Lieutenant Reginald D. Thomas,

Notable changes of the month were the succeeding of Lieutenant Robert I. Brown. Jr., assigned to Hawaii, by Captain Horace N. Heisen, new Boston Airport commander. Captain Lyle C. White, flight surgeon for Boston, returned from a month's leave in Haiti with Mrs. White. Cy Serious Caldwell, with his wife, flew into Boston from an extensive Travel-Air airplane sales tour of the southland. Cy goes south with the birds and comes north with the birds. His wife travels with him to make sure of the birds he travels with. When he gets sleepy at the controls she flies the ship herself. He wakes up suddenly and with never a thought for her says, "My, what a well-trained little airplane this is to go along so by itself." By the way. Cy is now writing for Aero Digest. so I'll have to watch my step from now on. for Cv swings a mean pen.

Flying time from Boston by weeks in April for the different branches was: First week—Army, 16 hours; National Guard, 9 hours; Navy, 6 hours; commercial, 6 hours. Second week—Army, 7 hours; National Guard, 15 hours; Navy, 22 hours; commercial, 4 hours. Third week—Army, 29 hours; National Guard, 10 hours; Navy, 14 hours; and commercial, 11 hours. Cross-country trips were made during the month to New York, Hartford, Albany, Cape Cod, and



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BOOKS

#### DICTIONARY OF AVIATION

DICTIONARY OF AVIATION
By Robert Morris Pirre. 4276 Words and
Phrases. Aeronauties and Mechanical Flight:
Ballions, Alrehija, Aeroplanes, Heltenpters, Ornithoptars, Kites, Motors, Gyroscopes; Natural
Flight: Wings and Talis of Birds, Insects, Bats,
Flying-fishes; Aerostatics and Aerokinetics;
Streamline Rodles, Aerofolis; Meteorology; Weather, Cloude, Forz, Storms, Winds, Cyclones, Rain,
Snow, Hail, Dust, Rainbows, Sunsets, Hsloe, Aurorss, Lightning, Pressure, Temperature, Humidity, Instruments, Climstology, Astronomy, Gography, and Wavigation: Jatitude, Longitude Time,
Racing, Warfare, 287 pages, Cloth, \$2.96 postpatd.

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#### FIRST ANNIVERSARY OF THE FORD AIRWAYS

THE first anniversary of the opening of the Ford Airways was celebrated in April. In observance of the day the daily flight to Chicago was made by the Maiden Dearborn I with Eddie Hamilton in the cockpit, the same pilot who inaugurated the service a year ago.

Together with the report which covers the year's operation of the air service, two important developments, each a safety factor, were announced by the Ford Motor Company. The first is the experimentation with the radio beacon by means of which the planes are virtually independent of visibility conditions. The second is the decision to standardize upon multi-motored monoplanes in the company's air service.

Ford flying began between Dearhorn and Chicago on April 13, 1925. Later a second line was established between Detroit and Cleveland and on February 15, this year, Ford planes began carrying U. S. mail, connecting Detroit with the transcontinental air

Over 1,000 trips have been made by the air mail planes during the year, covering a distauce equal to more than eight times around the world and at a rate of about 100 miles an hour. There has not been a single accident and no one injured Practically no change has been made in the planes.

#### AIR DRIVEN SPEED BOATS POPULAR

H. L. BROWNBACK, president of the Brownback Motor Laboratories, who for seven years was connected with the Engineering Department of the Air Service. reports that the public is purchasing shallowdraught air-propelled speed boats. These boats are flat-bottomed, drawing from two inches to eight inches of water and able to maintain a high speed with the use of a very small amount of power. Brownback boats are powered with Anzani air-cooled engines. The passengers are protected from the propeller by an ingenious arrangement of rods and braces which eliminates the possibility of walking into the stick.

#### DEPARTMENT STORES TO SELL AIRCRAFT

H. STELLINGS, president of the J. Aircraft Corporation of America, has arranged with Gimbel Brothers in New York, Philadelphia and Milwaukee, and Kaufman & Baer of Pittsburgh to market their planes and equipment, starting deliveries the first of June.

The securing of these nationally known department stores for the handling of aeronautical equipment is the first step on the part of the Aircraft Corporation of America to merchandise their product in a practical and economical manner, and will assure the users thereof of a complete service.

Lieut. George Pond, who will be in charge of their engineering and technical departments, will leave shortly for an extensive trip covering the aeronautical centers in the interest of the corporation.

Say you saw it in AERO DIGEST

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#### AVIATION INSURANCE

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#### LITCHFIELD ELECTED GOODYEAR PRESIDENT

OF more than ordinary interest to aeronautic circles was the recent announcement of the election of P. W. Litchfield, pioneer manufacturer of lighter-than-air craft in this country, as president of The Goodyear Tire & Rubber Company of Akron, Ohio.

Last year Mr. Litchfield completed twentyfive years of service as an officer in the Goodyear organization, and was first vicepresident and factory manager of The Goodyear Tire & Rubber Company and first vicepresident and general manager of its subsidiary the Goodyear-Zeppelin Corporation at the time of his election to the presidency of the company.

For the past fifteen years he has been a close student of aeronautical development, and the first Goodyear aeronautical product was constructed under his direction. Since that time he has seen more than 800 balloons and 90 airships built for commercial, army and navy uses by his company.

In 1918-19 Mr. Litchfield was a member of the naval commission on European airships, studies being conducted in England, France and Germany, and he was active in the negotiations which brought the Zeppelin patent and operating rights to the United States.

He is the donor of the Litchfield trophy contested for in the annual National Balloon Races being held this year at Little Rock, Arkansas, on April 29.

The new Goodyear president was born in Boston on July 26, 1875, and was graduated from Massachusetts Institute of Technology in 1896, joining Goodyear four years later.

#### THE KING BIRD

THE Western Airplane Corporation, of which Leslie B. Coombs is president, is producing the King Bird, a three-place luxury-plane of entirely new construction. Announcement of the advent of the King Bird is being made in this issue of AERO DIGEST, and succeeding issues will contain specifications, description and pictures.

The Western Airplane Corporation is widely known through its Aeronautical Training Division and its Airplane Sales Division, both of which branches of the business have been functioning successfully for a number of years. It will therefore be of interest to their many friends to learn that the Airplane Manufacturing Division has SERVICE

Lt. Geo. R. Pond, U.S. N. R. Test Pilot for U.S. Army and Navy

Test flying for the development of new and experimental aircraft. 10 years flying experience. References — Government

craft manufacturers and heads of U. S. Army and Navy Air Services. Announcing a complete service and infor-mation bureau for aircraft operators and manufacturers covering:

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1. Flight testing of all types of land and water aircraft.

2. Accurate data and information on the problems of organized air lines and privately owned aircraft, based on practical experience and exhaustive study of operating lines here and abroad.

3. A directory of certified aircraft pilots and mechanics to fill every service requirement.

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been organized and is now in operation. Their first product is the King Bird luxuryplane, which will be sold to the flying public through dealers and distributors.

The Chicago Flying Club, which has done so much to boost aeronautics, is purchasing, at actual cost, the first King Bird to be

It is the intention of the corporation to make the organization cooperative by interesting as many people as possible in its success, much as a public utility does, and with this ultimate object in view a limited amount of stock is expected to be offered to Aeronautical Training Division students and others in the near future.

## DOPES

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# THE AERO CLUB OF COLUMBUS' NEW HOME

THE Aero Club of Columbus, Ohio, is to be congratulated on its beautiful new club house, located at Norton Field, which has just been completed.

The patriotic citizens who financed this aviation center for Central Ohio should be proud of their accomplishment as they have set a mark for other cities to shoot at. This building, which will also house the head-quarters of the Franklin County Reserve Officers Association and the 308th Observation Squadron, 83rd Division Air Service, faces the Norton Field airdrome, and is in direct view of all airline traffic through Columbus.

Some of the exclusive homes and clubs along the water fronts boast of having battleships and ocean liners from all over the world drop anchor in their 'front yards'; the Aero Club of Columbus likewise expects to be host to great airliners of the near future that will land in its front yard at Norton Field.

This building was originally a war-time barracks, purchased from the General Reserve Depot, and moved a distance of two miles to its present location. Over seven thousand dollars have since been expended in remodeling it.

The formal opening of the club house will take place in June in connection with a manimoth air carnival and aeronautic show.

The officers, directors and incorporators of the Aero Club of Columbus are: Capt.



Aero Club of Columbus' new home.

John E. Davis, president; 2nd Lt. Stuart E. Price, vice-president; Capt. William F. Centner, secretary-treasurer; Brig. Gen, Edward Orton, Jr.; Lt. Col. William M. Mumm; 1st Lt. Walter S. Meyer; 1st Lt. Clarence N. Cone; 2nd Lt. George E. Bulford, Ir.; 2nd Lt. William Munn, Jr.; 2nd Lt. Randall M. Mitchell; 2nd Lt. Maurice L Mullay; 2nd Lt. Henry A. Reinhard; 2nd Lt. Wm. Donald Walter; 2nd Lt. Albert E. Harter; 2nd Lt. Roscoe R. Aukerman; Howard J. McCullough; J. J. Munsell; E. S. Morton: Samuel Summer: Fred C. Perkins; Howard M. Jones; Edgar T. Wolfe; Samuel A. Kinnear; Samuel M. Coen; King G Thompson.

#### KIDDIES PARADISE

U NIQUE is the Teddy Bear Cave in the Roosevelt Hotel in New York, and as picturesque a playroom as was ever planned for children. Particularly so for the children of air-minded folks, for, besides hobbyhorses, dolls, teddy-bears, there are silvery

dirigibles, balloons, airplanes and gliders—quantities and quantities of them, big ones and little ones, just like Daddy talks of all the time, waiting to delight their little hearts. No other hotel in the world has anything which quite approaches the Roosevelt's Teddy Bear Cave.

It is quite fitting that a hotel named in honor of America's great statesman, and dedicated to his ideals of service, should give special attention to children for whom Theodore Roosevelt bore so great a love, and to airmen who are the protectors and defenders of the country that he loved so well.

The inspiration was developed by Edward Clinton Fogg, managing director of the Roosevelt, as a result of a talk with Captain "Eddie" Rickenbacker, America's famous ace, who resides at the Roosevelt when in New York. Possibly "Eddie" wanted a place for his newly adopted boy to play in while "Papa" is busy. Anyhow it is a step in the right direction. Other hotels might follow the example.

#### NEW BIDS INVITED

B<sup>IDS</sup> have been invited for the operation of the following contract air mail route: Cleveland, Ohio, by Akron, Columbus, Dayton and Cincinnati, Ohio, to Louisville, Kentucky, and return.

The distance between Cleveland and Louisville is approximately 400 miles,

Bids will be opened at the Post Office Department at noon on June 14, 1926.

# The logical place to buy planes and parts

The largest stock of airplanes on the Pacific Coast. More than one acre of floor space given over entirely to aircrast. A complete supply service which gives you the assistance and guarantee of satisfaction based on fifteen years aviation experience.

Write for information on SPECIAL PRICES now in effect on Curtiss JNs.

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SUPPLIES

for OX-5 motors

and JN airplanes

#### SPECIAL SPRING OVERHAUL OFFERS

1	1 set 80 gaskets 1 set 21 hose connections \$ 3.60	7 1 set water outlets 8 large valve-action pins } \$11.52	13 <sup>1</sup> gallon done 1 box of 20 assorted pinked- edge patches 2 needles and 1 spool lacing \$ 3.28
2	Offer 1 in addition to 8 intake valves and springs 8 exhaust valves and springs 8 intake push-rod springs	Offer 7 in addition to 8 intake yokes 8 exhaust yokes 16 small valve-action pins 8 medium valve-action pins	Choice of 1 Canuck elevator or 1 Canuck rudder, or 1 Canuck rudder, or 1 Canuck alleron; all covered
3	Offer 2 in addition to 8 pistons and rings 8 piston pins	9 1 new D81X2 Berling magneto 1 new Zenith carhuretor 2828.80	15 1 Starr copper-tipped cluh prop. 2 new 26x4 Goodyear cord tires \$20.00
4	Offer 3 in addition to 8 new cylinders 8 connecting rods 1 set connecting rod hearings	10 1 set main bearings 1 thrust hearing 1 crankshaft assembly }\$21.00	16 1 set OX-5 spark plugs 1 set spark plug terminals 1 set ignition wires  3 3.20
5	Offer 4 but substituting 8 used guaranteed cylinders and studs in place of new cylinders and ders	1 Canuck right side cowl 1 Canuck left side cowl 1 new Harrison hexagonal core radiator \$\$33.60	1 propeller huh puller 1 propeller huh-nut wrench 1 cranikshaft-nut wrench 1 lh. No. 19 safety copper wire 1 gross 1-16" cotter pins
6	Offer 1 and 3 in addition to 8 used A1 guaranteed cylinder assemblies	12 set (4) JN or Canuck landing gear struts cut to fit 38 ft. shock-ahsorber cord 1 axle \$17.88	18 1 oak or walnut copper-tipped toothpick propeller slightly used 26x4 tires \$20,00

No articles in the special offers may be substituted by any articles not listed above. Items may be interchanged at a proportionate corresponding alteration in price. The offers may be added to but not reduced. No orders accepted unless accompanied by 25% of the purchase price. Be sure to state preferred means of shipment.

The recent addition of the entire stocks of several prominent aircraft dealers in the U.S. and Canada has made these offers possible. The regular list prices on these items will positively prevail after May 15th, 1926. TAKE ADVANTAGE OF THE REDUCED PRICES NOW. All other items are in our catalogue. Send for it.

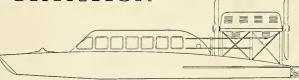
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Boats 2 to 30 passenger, 11/4 to 5 tons of freight, 12 to 42 miles per hour, 2 to 8 inches draught. Equipped with Anzani radial air-cooled aeroplane engines, 3 and 6 cyls. The standard engine of the world.

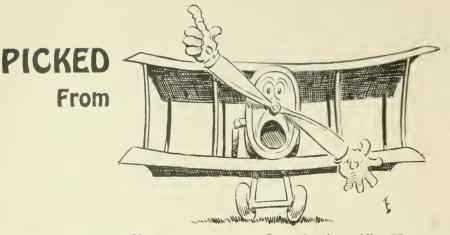
Write or wire for particulars.

World famous Anzani airplane motors 30 to 80 h.p., \$500 to \$1200

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The

AIR

AERO DIGEST will award a prize of \$5 each month for the best joke published. Only jokes pertaining to the aircraft field will be considered. Address the "Picked From The Air" Department, Aero Digest, 220 West 42nd Street, New York, N. Y.

Jim L. Kimmons, Fort Sumner, New Mexico, won the prize for May with the following:

First Pilot: "What part of an airplane causes the most wrecks?"

Second Pilot: "Oh, I don't know."

First Pilot: "The nut that holds the joystick!"

Traveler: "Could you tell me where that stunt flyer hangs out now?"

\_\_\_\_\_\$\_\_\_

Aviator: "Well, it's pretty hard to say because he has been so reckless lately, he's liable to be hanging on any treetop."

-Gordon Horsfall.

#### The Gentle Lover

They had been out for a little cruise. When up above the clouds there was some wrangling and quarreling and our hero was greatly disconcerted. She was penitent trying to make up but to no avail. George made a poor landing, the plane banged violently against a tree and a number of stays were broken. He got out, cursed a bit and then suddenly turning on the woman that has caused his distemper and subsequently ruined a good plane, he saw her sobbing with both hands pressed to her left side.

"Uh," he sneered, "I suppose I've broken your dear little heart?"

"No, you darn fool," was the gentle retort, "It's my rib."

Dodo: "Why do you insist on taking girls on airplane rides?"

Ray: "You can't hear what they're saying."

"I haven't enough money for a ride, but I'll give you a kiss."

"All right, I'll take you up on that."

-New York University Medley.

American soldier: "So you are in the aviation corps. I thought you enlisted in the cavalry?"

Gentleman of color: "Ah dun change."

American soldier: "What was the reason?"

Gentleman of color: "Wal, sah, for one thing, an airplane after it throws yo' out, very seldom walks over an' bites yo'."

-D. E. Mann.

An authority on words states that an airplane should always be referred to as "she." Does this apply also to mail planes?

Colonel Mitchell has resigned from the army, and we are hoping and praying that no foreign foe jumps on us while we are in this defenseless position.

-Southern Lumber:nan.

He: "I just went up with my Jenny for a little spin." She: "Oh, I hope she didn't walk back."

Pilot (relating his experiences): "—and when I gave her the gun—,"

Dora: "Oh, was it loaded?"

One good thing about an airplane is, when it stalls you don't have to get out and push.

Millionaire (to aviator doing a nasty tail spin): "This is one time I would like to be down and out!"

—Stephen Lucia.

.

# A literary gem from the mail-bag of the Wright Aeronautical Corporation:

"Gentleman:

"I wish to buy a plane that has a wing spread of 38 to 40 ft. must Carry at least 150 to 200 Gls. of Gas and have a speed from 50 to 190 miles an hour and must have an all meatal bullet Proof Plane and must have a color that no search light can Detect and must be able to, at least 30 to 40 cases which 985 lbs and also must travel at least 1,500 miles on 200 Gallons of Gas as my work is a dangerous job. I only work at night I might as well tell you what it is well it boot L. Now as you no thats the kind of Plane I want I will pay from 1,500 to 3,500 spot cash for it and just as soon as I hear from you I come and get it now talk quick as I don't have time to monkey around first youve got to show me your Plane will do 190 miles and it is bullett proof."

## AIRPLANES — PARTS MOTORS - SUPPLIES

WHEN you want anything in the line of aircraft materials you want prompt shipment. The size of our stock amazes most aviators who visit our warehouses for the first amazes most aviators who visit our warehouses for the first time. Flyers from all parts of the country say it is by far the largest and most complete stock they have ever seen. Our quality is unsurpassed. Prompt shipment on all orders under personal attention, added to our central location, assures im-mediate delivery. Order where the stock is complete. Last year's sales of \$200,000 indicate the volume of our stock and the large number of our satisfied customers.

Lowest prices on quality merchandise.

#### **ENGINE PARTS**

ENGINE PARTS

OX5 valves: exhaust, 40c; intake, 30c; cylinders, \$10; connecting-rod assemblies, \$2.50; ticdown yoke, 25c; crankshafts, \$10; crank-case: upper half, \$50; lower half, \$16. Intake rockerarms, \$1; water pump assemblies, \$6; exhaust manifolds, each side, \$3.50; exhaust pipe with elbows, \$1.50; intake manifold elbow, \$1; intake Y pipe, \$3; Zenith carburetor assembly, \$12.

#### MAGNETO PARTS

New model L-S, Simms magneto, (right or left hand) equipped for booster: for Hispano, \$20; for OXX6, \$25; new D-S1 Berling magnetos for OX5, \$16; new model 800 Dixie magneto, (right or left hand) for Hispano, \$30. We carry a complete stock of spare parts for the L-S Simms magneto.

#### INSTRUMENTS

INSTRUMENTS
10-lb, air gauge, \$1; oil gauges:
25-lb, \$1; 50-lb, \$1.50; 60-lb,
\$1.75; 120-lb, \$2.50; Zenith new
type altimeter, 4-inch dial, \$9;
17-jewel 8-day clocks, \$10; brand
new Fahrenheit gauges, \$6.50;
Johns-Mansville tachometer shaft
and housing 7½ to 10 feet, \$6 to
\$7.50; Johns-Mansville adapters,
1 to 2, \$6; gas gauges, \$5; knife
switch, 50c; gasoline tank shut-off
with sediment bulb, \$1.50; Bosch
double ignition switch, \$3.50.

#### MISCELLANEOUS

Grade A cotton, 35c yd.; plain tape, 3c. yard; 2" x 2½" scalloped tape, 6c yard; cloth propeller cover, \$2; new JN radiators, \$25; 26 x 4 Goodyear casings (new production) \$13.50; 26 x 4 inner tubes, \$3; DH 750 x 125 inner tubes, \$3.50.

#### PROPELLERS (New)

For Hispano, 150 h.p.: copper-tipped toothpick, \$50; cloth-tipped toothpick, \$30; leather-tipped Westmoore, \$25. For OX5: cop-per-tipped toothpicks from \$10 to \$20 each; copper-tipped clubs from \$10 to \$15 each, For Law-rance 28 h.p. 2-cylinder: \$15.

#### DOPE AND VARNISH

New production clear nitrate dope, 50-gal. bbl. lots, \$1,45 per

gal.; 30-gal. half-bbl. lots, \$1.60 per gal.; 5-gal. cans, \$1.90 per gal.; 1 gal. cans, \$2.4 Acrospar clear varnish: 30 gal. drums, \$2.75 per gal.; 5-gal. cans, \$3.75 per gal. 1 gal. cans, \$4. Genuine Valentines Valspar varnish: 5-gal. cans, \$5.50 per gal.; 1 gal. cans, \$6.50.

#### FLYING EQUIPMENT

Summer-weight flying suits, white, with insignia, \$6,50; khaki government-model with big map pocket, \$10; NAK goggles, Resistal glass, \$4.76; Jumbo, \$3.50; French design gogglettes, \$3.50; Italian gogglettes, \$6.

#### NEW STANDARD AIRPLANES

New Standard J-1 airplanes complete with new OX5 motor, \$1100; complete with government-overhauled OX5 motor, \$900; complete with used OX5 motor, \$900; complete with new OXX6 motor, \$800; complete with new OXX6 motor, \$1300; complete with slightly used or overhauled OXX6 motor, \$1100; complete with 150 h.p. Hispano motors, (all motors are in A1 condition and completely overhauled) \$1500 to \$1800; complete less motor, \$650.

#### MOTORS

OX5, used, \$75 to \$150; OX5 army-overhauled, \$250; OX5 our own overhauled, \$250; OX5 our own overhauled, \$200; brand new OX5 in the original crates, prices from \$275 to \$500. These low prices are due to the quantity we have purchased—write for full details. OXX6 used, \$175 to \$250; OXX6 overhauled, \$350; OXX6 overhauled, \$350; OXX6 used about 20 hours \$400; OXX6 thand new, \$700; \$0 h.p. Le Rhone, (used about 5hours) \$30; new \$0 h.p. Le Rhone, \$50; Model A Hispano, 150 b.p., Al condition, completely overhauled, \$500.

We have the largest stock of airplane motors in the United States. We just completed the purchase of 1500 brand new OX5 motors from the Horace E. Dodge Boat Works of Detroit. We believe these are the last new OX5 motors that will ever be available. We have already sold several hundred of them to manufacturers. several hunds manufacturers.

#### FLYING INSTRUCTION Three separate courses are offered:

\$100

\$150 \$200

No charge for damage to planes. Instructors are men of long experience who take personal interest in their students, thus reducing to a minimum, any danger of accident to ships and students. Only new equipment is used for instruction purposes. Best of living conditions and very reasonable rates for board and room. Transportation to and from field furnished without charge, Choese an aviation center for your instruction. You can learn to fly here.

Write for complete catalog and literature.

NICHOLAS - BEAZLEY AIRPLANE MARSHALL, MISSOURI.

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#### THE SIKORSKY "S-35" AIR TRANSPORT

The "S-35" is a three-motored all-metal freight or passenger air transport. The "last word" in airplane design and construction. We are agents also for other outstanding Sikorsky types, meeting every need of commercial service.

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#### **GNOME - RHONE - JUPITER** AIR-COOLED MOTOR

This motor has the world's record for endurance (150 hours), and for lightness-in complete running condition it weighs but 715 pounds. Maximum h.p., 530; normal h.p. rating, 400. Fuel consumption .482 pounds per h.p. hour.

We help you to make your airlines profitable. Get under way and save money. Write us for prices and delivery dates. Consult us on your airline problems.

H. F. HARTNEY Vice-President and General Manager

General Airways System, Inc. 250 West 57th Street New York City



The Pioneer Compass is the result of many years of development and is a thoroughly satisfactory instrument. The card remains steady in flight, and continual yawing, rolling and pitching in bad weather have very little effect upon it. It will not "spin" under these conditions. After being disturbed, as in a steeply banked turn, it returns to meridian quickly, and may be depended upon for an accurate indication within 30 seconds after straight flight is resumed.

sumed.

This compass has both a vertical and a horizontal card, and can be read from the top or side, and from either the front or the back. It is supplied with any one of three types of mounting bracket; for mounting on the instrument hoard, for mounting flush behind the board or for mounting on a horizontal surface.

Write for descriptive folder and prices.



GUARANTEE -Should any Plo-neer Instrument prove defective it will be repaired or replaced with-out charge if re-turned to the fac-tory within one year, provided it has not be a taken apart.

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WOODSON EXPRESS TYPE 2-A

#### Equal to the most severe punishment insuring safety. A safety factor of 8.

The fuselage construction is of spruce throughout, covered with 1/8" three-ply birch waterproof veneer. This construction will stand up under all weather

HAS A FINISH EQUAL TO A PIANO, WHICH MAKES IT VERY ATTRACTIVE TO PASSENGERS.

This type is powered with either the 260 h.p. Salmson water-cooled radial or the Wright 200 h.p. air-cooled radial. Has the same performance with either motor. A SEATING CAPACITY OF FOUR, OR A PAY LOAD OF 600 LBS.

Can be successfully operated from a field 800 feet square.

Will land in 500 feet and take off in 150 feet with full load.

Price with Salmson engine, \$3500 f.o.b.

AN EXCEPTIONALLY WONDERFUL PLANE FOR THE MONEY

Orders must be placed now if delivery is required soon.

WOODSON ENGINEERING COMPANY. BRYAN, OHIO

#### AIR-HOT AND OTHERWISE

(Continued from bage 260)

But now listen. Verily the shield is just the same. It is, it must be, and in fact can be no other than our great man Davis. But once more hist! The golden hue is gone and we find but that cool color of the dime or of the Mellon aluminum spinach boiler to wanly stir our souls.

For as this great man has accumulated honors he also has accumulated chilly feet as far as air defense of the United States may be concerned. He declares. as these mere Congressmen sit crushed with awe to hear the actual voice of the great man:

"I naturally give great weight, in discussing military problems, to the opinions of men who have devoted

their lives to the study of these problems."

Humility. How touching! This great warrior actually gives weight to the opinions of men who have studied how to fight on ships at sea and in trenches and in forts on land. Therefore will he not also consult those wise in the entirely different matter of fighting in the air? Of course! We hope. But hope is often subject to a crash. It strikes bumps and is liable to go into a flat spin.

"The Air Bill . . . based on recommendations of the non-partisan, non-political President's Aircraft Board, headed by Dwight Morrow" (composed of estimable gentlemen, but who hardly could qualify as aircraft experts), "which made a searching investigation into the subject of aviation" . . . finds that "the proper measure of our Army air strength should be the strength needed to secure our national defense based upon the effective enemy air force which could be brought against us, keeping in mind our situation as protected by broad oceans on either coast." Oh, yes! It was a searching investigation—four whole weeks. Let me see. The Lassiter Board, composed of wartime experts, spent months and the Lampert Committee, comprised of Congressmen who heard the testimony of over one hundred and fifty of our leading aeronautical experts, most of whom were under oath, nearly a year. And Davis accepted the Morrow Report.

Truly the shield's other side!

Where now is that dread dirigible which could cross the sea so easily and drop bombs on us by tons as bombs indeed in the World War were dropped on London?

The Assistant Secretary saw that dirigible. The Secretary can see only peace, security and calm. And it is the Secretary speaking now. The Assistant Secretary had had far less politically at stake when he had visualized that carrier of high explosive.

"The Board found this country is not at present in danger by air attack from any potential enemy of menacing strength." We are "protected" (now) by the broad ocean on either coast.

Forgotten are those grim words at Providence: "We shall find ourselves in an appalling situation . . . practically powerless in the case of an emergency . . . because it takes from 10 to 18 months to build a plane and our airplane industry . . . could not possibly carry a war-load . . . defeated before we began to fight . large numbers of our boys unnecessarily killed . . . Are we to sit in fatuous folly? . . . Who pays the cost? Every mother whose boy is sacrificed on the altar of unpreparedness."

It cannot be Dwight Davis speaking. But nevertheless it is

When Mr. Wainwright (once himself an Assistant Secretary of War) ventured to inquire why the proposed Bill took up none of the recommendations of the Lampert Committee, the answer was: "... the purpose of this Bill is to carry out the recommendations of the Morrow Board." The four weak—no, I meant week Board.

At Providence Mr. Davis proclaimed in terror that in 1926 we would be defenseless and open to attack.

May I ask whether the duty of the Assistant Secretary of War is not that of procurement? And if so, why a shortage of planes in 1924-25-26 while he occupied the chairs of Assistant and Secretary of War?

In Washington, the same Davis (having been promoted) said: "I am informed . . . that we are at least equal to any other nation in the world. I would put our personnel higher, but we are at least equal." If our courageous and patriotic personnel is higher in this defenseless state it cannot be credited to the weak and flimsy aircraft policy forced on them by the Secretary of War and the General Staff.

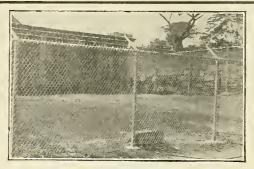
The man who climbs in a republic sometimes forgets even the fascinating history of his own past speeches. So blinded seem our Secretary's eyes that he evidently does not even think of the great distances which our gallant "personnel" would have to crash if one of those superior forces he referred to should cross an ocean which he once declared no longer to be any barrier and casually shoot it down.

Also forgetting what he said about the words of experts, he ignores the recommendations of the Chief of our Air Service, the Lampert Committee and the testimony of the World War Aces, Rickenbacker, Landis, Chambers and others, whose experience qualified them as flying and not talking experts, and for an authority quotes instead the words of an English airplane manufacturer, C. F. Fairy, who, after having visited the United States and stayed a month to look us over, found America quite safe enough against attack to please an Englishman.

The Lampert report of native-born Americans, the solemn warnings of our able Air Chief Patrick, the sacrificial plea of Mitchell impressed him not at all, quite naturally. Fairy after thirty days declared our Air Force to be competent. Therefore, it must be beyond compare in the eyes of our War Secretary.

Scorn Patrick and cashier the patriotic Mitchell! (Continued on page 308)

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AIR TRANSPORT EQUIPMENT INC. Carle Place, Long Island, New York EVERYTHING FOR AIRCRAFT (Continued from page 307)

Fonck, the polite French ace whom Davis also quotes, may have been here two full months, thus besting England's thirty days. But that which Davis quotes from Fonck is not, it may be noted, Fonck's confidential statement to his own French Government. It is Fonck's French politeness prepared for reading in America

How could these visitors investigate? As Chairman of the Reception Committee which took care of them I know that they were busy at the races—and elsewhere. We tried to take good care of them. They are fine fellows—good patriots—for their own countries, as they rightly should be. Our Secretary of War might take a few lessons from them. They were encouraged to study with intensiveness certain things American which elevate, but not to make an expert study of our Air Forces and plans so as to give them competence as guide for the American War Secretary.

If the politeness of two foreigners will thus affect the members of our President's cabinet we must surely tighten up those laws which let in Vera, Countess of Cathcart, (in company with her pet turpitude) to see Earl Carroll's lady bathe in good champagne without benefit of clergy or Ivory Soap, and which let in these eminent air experts to glance at us with casual eyes and then easily control the attitude of our profoundly able Secretary of War.

Mr. Dooley, once, in writing to Chauncey M. Depew about the little Spanish War, referring to that late distinguished predecessor of the great Mr. Davis, Mr. Alger, said:

"It's fine to be th' sicritary av War, Cha'ncy, but it must be hell to be the sicritary av A war."

Maybe Mr. Davis, were he called upon as Secretary to view those heavily bomb-laden foreign dirigibles which as Assistant Secretary he so clearly saw dropping their explosives over Pennsylvania Avenue, and maybe even on his now ultra precious War Department, with its soft rocking-chairs and well-paid bureaucrats, would try to wipe out of his smarting eyes the tear-gas, would reach into his pocket for his comb with which to rake the hostile shrapnel from his hair and then cry to Providence (not, this time, Providence, Rhode Island): "Heavens! How could any man be quite as right as Mr. Dooley!"

But Mr. Davis, careful to hurt no feelings, for, after General Mitchell's grim experience, he may guess accurately that our flying men have suffered quite enough soul bruises, declares:

"Our personnel is equal to any in the world!" How

Ah, that must please that gallant personnel! How they must love to find their glories used to back an argument for Uncle Sam to sit back in his departmental snuggeries, chat there cheerily with the three Departmental office gods, dear little Prop, sweet little Ag and charming little Anda, and do nothing, while somewhere, in some other part of this delightful, quarrelsome old earth, somebody may be busy polishing up his engines, filling his tanks with gasoline, setting his propellers at exactly the right angle, loading up the maximum of bomb-cargo, getting every time-fuse accurately set, and preparing to come over here and make dear old Uncle Sam a present of them. "Who pays the cost? . . . Every mother whose boy is sacrificed on the altar of unpreparedness."

#### LEAVE IT TO THE PILOT

(Concluded from page 259)

for him, but I recognized the landmarks as we neared my own stamping grounds, and we hit Wallace Field without turning from our course the width of a horsehair.

Of course, the Army flyer hasn't a monopoly on this business of hitting the bull's-eye with a plane. I was wondering if they had when in front of "Rusty" Campbell in a Travel-Air plane from his home field at Moline, Ill., to Chanute. We were crossing a few hundred miles that was new to both of us, but the hangars and shops of Chanute came to us out of the distance as if they had been put there just for us.

THE SIGN ON THE LITTLE RED DEPOT

How do they do it? I don't know. Lieut, Martinus Stenseth showed me one that was new to me as we were flying from Davenport to Minneapolis for the dedication of the Wold-Chamberlain field, in the old speedway there. When he wanted to confirm his location he glided down nearly to the roofs of a small town, and we both read its name off the little red depot. That will not be necessary when all towns have painted their names on one or more of their larger roofs, but it has helped "set the watch" of many a flyer, cruising over new territory.

Fact is, I have always had the suspicion that a pilot is unusually careful when he has a passenger up with him. He has the safety of himself, his ship and his passenger at stake, and I believe he considers them in reverse order—his passenger, his ship and himself. He will take no foolish chances.

The man—or woman—who wants a thrill, therefore; who can appreciate the unrolling underneath him of a panorama which is to be seen nowhere else; who want to get somewhere in a new way, and in a hurry, ought to tell himself this summer, "It's time you tried the air lanes."

Climb in with the pilot, and leave it to him. He'll get you there, and you'll have the time of your life.

#### TWISTED IDEAS

(Concluded from page 256)

flying is to succeed. The multimotored airplane with high safety factors of design appear at present to be the solution to commercial flying. That many laymen still measure commercial flying by the exploits of military aviators is seen every day in letters received at Headquarters in Washington. Some of the letters quoted indicate this, and very often communications like the following are received:

"The Chief of Air Service,

"Dear Sir: I have bought an airplane from a fellow who said it flew in the Army, so I know it must be all right. Will you please tell me the best way to start into commercial flying with it."

Or sometimes a letter like this will come in:

"I have bought a thing at a sale that the man said was a rotary airplane motor. It is a funny looking contraption, but I want to put it in an airplane and since I am for safety first last and all time, I would like to buy an Army airplane to fasten this motor on. And incidentally, will you kindly send me a handbook on how to fly and set up an airplane, also how to start and stop a rotary motor."

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#### A NOD AND A WINK

(Continued from page 270)

Sweepstakes. Handsome, debonair, of charming personality, he has won the best wishes of the ladies, as might have been expected. He is an F F V, by the way—First Families of Virginia. His plane was manufactured by Fokker, a member of the L F N I-Last Family Arriving New Jersey. Hard to beat a combination like that, taken from the Social Register and the Immigration List.

When all the expeditions come back and enter the lecture bureaus and the moving picture lots. Byrd will have it all over the other boys. He's about the only one of the crowd who would film well as the hero. About the best the others could hope for would be to play the heavy father or the rich uncle from Australia —and Wilkins has already signed for any Australian rôles. It must be remembered that the real reason for going North is to advertise various equipment, people, and Navies, plus lecture and picture profits. You can see how Byrd stacks up on this layout. Merely lecturing on the Pole is nothing compared to starring in such a film as "Polar Passions," a pulsing panorama of primitive emotions under the midnight sun with Pola Negri. There are more ways to Hollywood than the old Santa Fé Trail.

I've just heard of three more expeditions to the Pole. One can't write fast enough to keep up with them. Earl Ovington, commanding the Santa Barbara Expedition, is delaying his start until the tailors complete long fur pants for the party. The Barbarians fly in knickers and golf stockings usually—inadequate equipment for the North where men are men and legs are cold. Tony Yackey started north from Chicago, but the whole expedition got stuck on a bar in Milwaukee. Tony is writing a series of flying articles called "Some Hops I Have Taken." The first one, "Sadder, Budweiser," will be published soon.

Casey Jones started for the Pole by Subway. He looked his last at the New York Aquarium, waved at the Statue of Liberty, and with grim determination on his face dived under ground and dropped his nickel in the Interborough turnstile. A radio message reported his arrival at Yonkers, the last outpost of civilization. Nothing further has been heard from Casey, but he is probably still digging his way north with a metal propeller.

The Amundsen-Ellsworth Expedition is inflating its airship with laughing-gas by suspending the ship immediately over the headquarters of the League of Nations at Geneva. Any American expedition using airships is urged to communicate with Nick Longworth, Speaker of the House of Representatives, at Washington, where gas will be supplied gratis.

Speaking of the League of Nations, why not move it to the Pole when all these varied nationality expeditions get there? The standard polar airplane is as near neutral transportation as one can get. Everybody uses it. Of course, Byrd is taking along an Oriole as well. But that's only for sentiment—a little souvenir of Casey Jones. I flew one of his propellers down south recently for the same reason.

It is interesting to speculate on what the boys are going to find when they do get to the Pole. You know, they don't intend to land-just fly over it and find out a lot of scientific facts, such as the fact that it's quite cold, and even that it's damn cold. That much scientific discovery will likely be unanimous. But they won't agree about anything else. Recollect Peary and Doc Cook. What a fine oil-can Cook turned out to be! Amundsen called on him in jail recently, in Texas, and found him knitting, so the papers said. I don't know what there is about the Pole to drive any man to knitting, but this year's crop of explorers would better look into the matter. They're all following Doc Cook's footsteps—a sort of Cook's Tour, one might say. I'll bet old Doc is laughing to himself. He's had some. I think he'd sooner spend this year knitting. Yes, even in Texas with Ma Ferguson as Governor.

Imagine the fun the Eskimos are going to have with all the airplanes and airships the boys will leave up there! Amundsen left them one last year. They never could decide who owned it. But by next summer every little Eskimo will have an airplane all his own. They'll use them for perambulators to push the kids around in. And what nice jars those J4 cylinders will make to keep bears' grease in! The practical joker of the tribe will get quite a kick out of a Scintilla Magneto, when he revolves it and invites his friend to hold the other end. Or he will get the fun, I should say, and his friend will get the kick. Well, the poor Eskimo doesn't get much fun as a rule. It's nice to see the white men going up there to amuse the simple native. I hope they give him a good laugh,

Meanwhile, I am not going to the Pole myself, if anyone should ask. The trip has become too common. Every pilot is doing it. But I shall lecture just the same—and a startling aeronautical feature I shall be. Watch the bill-boards for this:

> BARNUM & BAILEY present Cy Caldwell The only living pilot who has no

intention of flying to the North Pole.

#### Dear Reader:

My sole object in writing these articles is to be of service to you, and, I may add truthfully, to be of as little service as possible. Furthermore, at all times my earnest endeavor is to give you absolutely no useful information. There is too much about now. And no one is using it.

With the beautiful spirit of service in mind, I shall add this thought: When you are visiting New York, and would like to know where you can get a fine room with bath for a dollar, and a delicious broiled live lobster for sixty cents, just call me up. I don't know, either.

In short, if I can do anything to serve you, to make your visit to New York pleasant and happy, do not hesitate to call on me. I am always out.

My telephone number is Wisconsin 3770. But the line is always busy.

Yours very sincerely,

CY CALDWELL.

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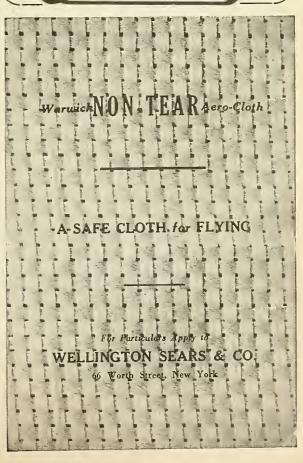
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#### MILITARY VALUE OF AIRSHIPS

(Concluded from page 262)

carried on for an indefinite period.

It has been said that the principal use for the airship is in reconnaissance work, that it is not essentially an instrument for aggression, but a patrol craft which ordinarily does not seek a combat and which stays out of reach of enemy action.

Since, however, any military craft must be capable of at least a measure of defense and attack, a survey should be made of the chances which the airship would have if it came to close quarters with an enemy.

It may be stated at once that the only serious enemies of an airship are aircraft—either airplanes or stronger airships. The airship can stay out of reach of any enemy on the surface, either stationary or slowly moving, and can choose its time and conditions for an attack on such objects.

With a submarine the chances are that even if the submarine should have the initial advantage of surprise, the airship, if it chose to run away, with a speed of at least a mile a minute, would not be seriously hit—if at all—by the first uncertain fire from the submarine. The airship would then send airplanes with bombs and machine guns to sink the submarine or force it to dive, whereupon the airship would attack it further with heavy depth bombs. However, ordinarily the airship would fly over the submarine and have an excellent chance to sink it by concentrated shelling from its automatic guns or with a few bombs.

Conditions would be similar for an engagement between the airship and a destroyer. When meeting larger surface vessels, like cruisers or battleships, which can hardly ever occur unexpectedly, the airship would at first stay out of reach, if possible out of sight, until conditions were favorable for day or night attack.

In the former case the airship might send bombing or torpedo airplanes against the enemy unless it were too strongly defended by airplanes, or if the sky were completely overcast with clouds it could even disregard enemy airplanes, and using its observation car, could attack the ship with heavy bombs with reasonable safety and probability of success.

For a night attack the airship can count frequently on low layers of haze, mist or clouds, which would make the enemy's most powerful searchlights of comparatively insufficient penetration so that using its own airplanes to fly ahead at low altitudes to blindfold the enemy fleet by strong magnesium flares dropped with parachutes, it would have at least even chances for a successful bombing attack even against a group of powerful battleships.

The defense of land objects against airships by anti-aircraft artillery is extremely inefficient, as shown in the defense of London during the war. In spite of the enormous concentration of anti-aircraft batteries and searchlights and with the most experienced gunners and airplanes, only five out of at least 100 Zeppelins which passed over London during the war were actually shot down there, and none was prevented from dropping its bombs. Of the five at least two were brought down by airplanes, so that only three per cent are left to the credit of anti-aircraft artillery.

It is safe to say that at least four out of the five Zeppelins came down only because their hydrogen gas was ignited by incendiary projectiles, so that even the immense apparatus organized for the defense of London would have been insufficient if the Zeppelins could have used helium.

It would seem highly probable then that the modern military airship will at least occasionally have chances for successfully bombing objects on land or sea.

On the other hand it should be evident that defense against aerial attack can be had only from the air. It is vital that any place of military importance on land should be protected by squadrons of fighting airplanes, and that any surface fleet must be accompanied by a number of airplane-carrying cruisers with as many airplanes as possible, for only in the superior number or quality of airplanes is the assurance of successfully repelling aerial attack before it can become effective.

It is left as the last point of these discussions whether a military airship dares risk an attack against enemy aircraft.

While it would be folly for a single airship, with its say 20 airplanes, to attack on a clear day a large surface airplane-carrier with perhaps 100 airplanes, it might do so on a cloudy night, or it might happen that a number of airships, say five (which incidentally again would cost only half as much), could concentrate on this surface vessel, and by sending their 100 pursuit planes against its 100 could so far deprive it from its only efficient defense that it would be an easy prey to a day or night bombing attack.

It would seem from this that it would be highly dangerous for a nation which had invested a given sum in surface carriers of airplanes to send them against another nation which had expended the same money in airplane-carrying airships.

In the event of an encounter with enemy airplanes inferior in number or type to its own, the latter could avoid destruction only if capable of running fast enough to get out of reach of the airship and its planes.

In the final case of a fight between two airships, the better ship would win. A helium ship would ordinarily defeat a hydrogen ship unless the latter had sufficient speed to escape. An airship carrying a number of planes would defeat a smaller ship carrying few planes or none. An airship which could make quick repairs to its gas cells in flight would have the advantage over one not so accessible to repair.

It is not claimed that the airship makes other types of craft obsolete or that it will ever supplant the surface navy. But it may be said that airships make other units of naval defense more effective. It relieves the surface vessels from important scouting duties thus enabling greater concentration of men, materials and money in actual fighting strength. And the airship will greatly increase the usefulness of the airplane by so largely extending its radius of action.



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#### "HELL'S BELLS" O'NEIL (Continued from page 274)

to the P.M.C.—and you'd of thought even then it wasn't going to be enough. I never saw anyone under the rank of brigadier drink as much as that major drank before he went to his maker. We feed him everything he calls for and he rings the changes right

through the wine card and back again with never a let up on Hank and the blue bathtub which the spurs ripped out the bottom of.

'In my day, shavetails was shavetails, by my broken down mortals! And what's more, I'll have him lashed to a wagon wheel-whiskey-neat!"

"And again. 'By the belly of St. Ouenet! Hasn't he come down yet? Another whiskey—neat!'

"And again. 'I'll bust him I will- both ways—but

with my hands first.'

"Well, pretty soon we see that we can feed him whiskey all day and he'll still be mad. We had a young fellow there, though, who had some brains. He got them out, dusted 'em off and got to work inventing drinks. 'Major's Special,' he says, and passes along some gin, whiskey and curaçoa. No effect. The next one is called 'Double Mumps' and is made of cognac, Rhinewine and crème de menthe. No effect. Then comes 'Hoof and Mouth'-apricot brandy and three mixes of vermouth laced with worcestershire sauce. Still no effect. Following that he mixes crème de coco in equal parts with cherry cordial and kümmel and calls it 'Three Ways to the Ace.' Still the major raves on about what he's going to do to Hank for bombing the bathtub. But the young fellow is game and keeps on inventing. After awhile he just sticks to kümmel as a base and mixes it with everything from sump oil to gasoline. Now I don't care what kind of major a man is, he can't stand that. At three o'clock this one takes his last drink—the 'Blue Bathtub'—which is three parts King William, two of kümmel and one of issue rum from the bottom of the jug. He blinks, groans and his eves roll in the dust.

"Sequel?" asks Hells Bells, "There ain't none. The major slept for two days and when he came to, everyone from the boy mechanics upward swore he'd never owned a blue bathtub and after a few days he believed them. In the meantime Hank McCarthy cables home to his old man to mortgage the glue factory and to send the check so that he can keep this major drunk for three more weeks until he learns what he wants to learn about our bomb sights. It was a harrowing ordeal but we took turns drinking with the major and that's how one boy got around to making the world safe for democracy and I don't mean peradventure either."

"Which reminds me of the time my kid lieutenant insulted six admirals to their faces and got away with it."-(In June.)

#### ARCTIC DANGERS

(Continued from page 263)

and are in store for those of this summer?

First of all, success or failure lies in the financing of the expedition; second, in the experience, knowledge and training of the personnel.

Peary had all these qualifications when he discovered the North Pole in 1909, and it is safe to say he could have discovered the Pole twenty years earlier if he had the personnel, the ships, 139 dogs and the equipment. Amundsen reached the South Pole for these reasons and Scott perished for the opposite reason. Wilkins now is doing at Point Barrow what Amundsen tried to do four years ago. Amundsen failed because he could not raise the funds necessary to insure success. Wilkins has the necessary financial backing and with it the chances are that he will succeed.

Amundsen failed last year because his finances did not allow him to obtain a multiple-engined airplane with a cruising radius to cover the distance from Spitzbergen to the Pole and back to his base. He is on his way now with a small semi-rigid dirigible, the "Norge," with a cruising radius not only sufficient to cover the planned route but with a safe margin of 1200 miles, allowing for adverse winds. It is the best he could afford although he would have preferred the R-36 or the Los Angeles to make the trip in comfort, safety and with absolute assurance of success.

The greatest handicap that besets the explorer is the financing of an expedition. From his past experience he knows exactly what he needs to make the expedition a success, and after he has completed all his plans, he tries to raise the money. He requires, we will say, one hundred and fifty thousand dollars. After heartbreaking months, he finally succeeds in raising only half that amount. He is unwilling to give up the desire of his heart and years of work. He feels he must go through with it and must make an attempt to reach his goal even though his means are inadequate.

In my opinion, the expedition headed by Commander Byrd is an example of a case of this kind. I went to see him off and wished him good luck for, through my years of experience in the Arctic, I know the hardships in store for him.

The major flights of his expedition are to be carried on with one large three-engined Fokker. Amundsen had two large airplanes, last year, with a cruising radius to allow him to gamble on making the distance. He failed to reach the Pole but succeeded in getting back safely with one of the planes. Byrd is staking his all on this one large plane. Although he is taking a smaller plane, a Curtiss Oriole, it is to be used only for short hops. He has not the cruising radius to make the flight direct so has to fly first to the north of Greenland, there make a cache of fuel and then attempt the flight to the Pole.

Imagine him leaving Spitzbergen, arriving at Peary Land and then looking from the cockpit of his airplane for a landing field. His whole enterprise may depend on his first successful landing and then on three consecutive flights without a mishap over the Polar Sea, four hundred to eight hundred miles from any source of help. A trip from Peary Land to Etah without dogs, pulling your own sled, is enough to balk the most experienced explorer.

There are numerous weak points in the Amundsen expedition which his experience and knowledge will have to counteract. Compared to a Zeppelin type his ship is small and semi-rigid and therefore the frame is frail. The nose is not strong enough to anchor on a mooring mast, consequently, at Pulham and Leningrad, he had to seek refuge in hangars and build a shed at Kings Bay. With a speed of 50 miles an hour, he has not the advantage of the airplane and must depend upon favorable weather, otherwise he will be blown out of his course. His great advantage, however, is that he will not have to make a forced landing in case of engine

(Concluded on page 318)

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(Concluded from page 315)

trouble or lack of fuel, but can remain in the air over the rough Polar Sea.

Another expedition which has a fair chance to be successful is the one headed by Wilkins, trying to fly from Point Barrow to the Pole, find land and perhaps attempt a trip across the Pole to Spitzbergen.

He shipped everything by rail to Fairbanks, Alaska, there assembled his personnel from experienced Alaskan flyers to dog mushers and dogs, and is now trying to establish a depot at Barrow for his coming flights. Wilkins, not having had any experience with conditions in interior Alaska, took with him two motor sledges to transport his supplies from Fairbanks to Barrow, not by the roundabout mail trail down the Yukon by way of Norton Sound, Kotzebue and the coast, but by straight line over the Endicott range to Barrow. His motor sledges would have been a success on the Arctic coast with which he was familiar but not in the interior of the Yukon and Kovukuk countries.

The motor sledges need snow packed hard by the winds on the arctic plains. The snow in the interior and timbered countries lies where it falls, soft as feathers and six feet deep. It is necessary to wear six-foot snowshoes at Fairbanks while only 28-inch snowshoes are worn by the Eskimos on the coast. Hence his tractors proved useless, as every experienced northern explorer warned Wilkins when he arrived with them at Fairbanks. He had to abandon the tractors and use the old method of dog teams. To make a 500-mile trip without trail over unknown country and mountain ranges with only your camping outfit and food is a difficult undertaking, but to increase the load by freighting gasoline and fuel is arduous and tedious. Their dog team has been on the road for two months and has not yet arrived at Barrow.

Wilkins is now using his single-engined plane to do what the dog teams and tractors were intended to do, and has already made two trips to Barrow and landed three thousand pounds each trip in about 5 hours what men and dogs could not do in two months.

He has two Fokkers, one with three Wright Whirlwind engines, and the other with a single Liberty engine so that one plane will be able to assist the other in case of accident.

#### BYRD FLIES NORTH

(Concluded from page 257)

inches from tip to tip, is 49 feet 2 inches long and 12 feet 9 inches high. The fuel capacity is 420 gallons of gasoline, carried in two 100-gallon tanks located in each wing and two specially built 110-gallon tanks located in the fuselage of the machine. Tests proved a gasoline consumption of 28 gallons per hour and a cruising speed of 100 miles. Complete radio equipment is installed, consisting of a receiver and a 50-watt trans-The call letters assigned to it are KEGK. Skiis will replace the landing wheels.

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# Byrd sails for the Far North!

Glimpses of the Polar Expedition and the Mobiloil-lubricated Fokker plane

BYRD ARCTIC EXPEDITION
NAVY BUILDING
WASHINGTON

March 31, 1926

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R. E. Byrd Jr It Cmdr4



LIEUT. COMMANDER RICHARD E. BYRD, JR., U. S. N. Ret. (center) in command. Floyd O. Bennett (left) second in command and pilot. G. O. Noville (right), Lieutenant U. S. N. R. F., third in command and flight engineer—a Mobiloil engineer whose services were especially requested by Commander Byrd.

A Case of Mobiloit, part of the shipment requested in Byrd's letter, going aboard the S. S. Chantier.



A PICTURE OF THE FORKER PLANE, "Josephine Ford," powered with Wright Whirlwind engines, taken from the air, on a trial flight.



Byrd and Noville, as they will appear dressed for the Arctic.

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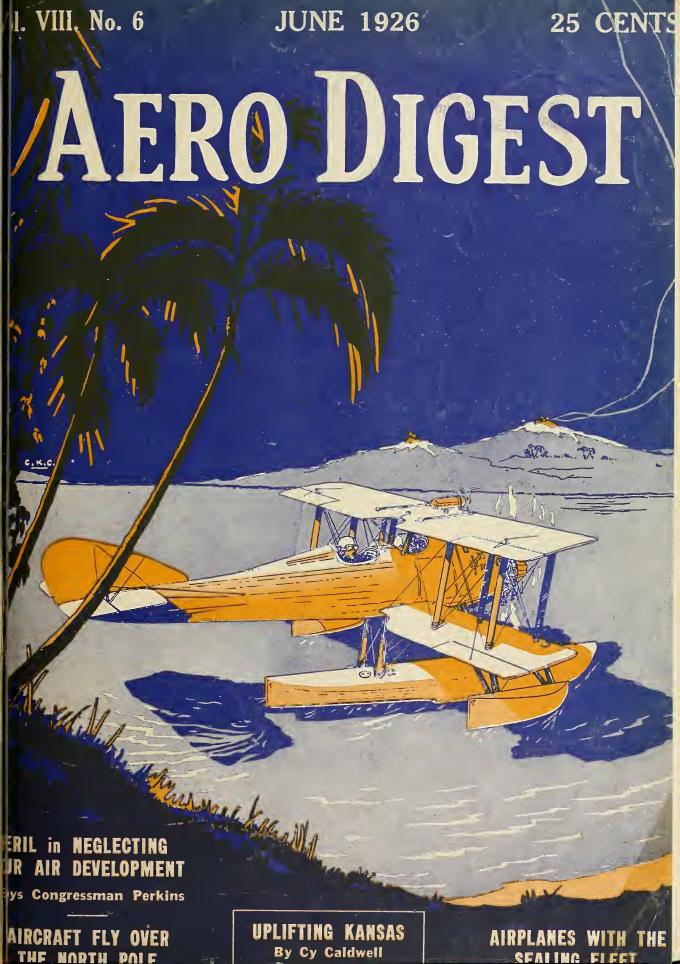




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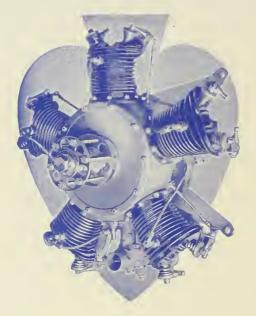
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#### The design and performance of SIKORSKY AIRCRAFT have received world-wide recognition.

It was, then, no chance circumstance which prompted Capt. Rene Fonck, French "Ace of Aces," and leading allied flier in the World War, to select for his NEW YORK - PARIS NON-STOP FLIGHT which is planned for summer of this year,

#### THE NEW 3-ENGINED SIKORSKY PLANE

The NEW YORK TIMES, recognized as America's leading conservative newspaper, in a 700-word editorial entitled "Another Non-Stop Flight," states that the Sikorsky model was Capt. Fonck's choice "after he had made the rounds of French, English and American shops."

(3)

(F)



CAPTAIN RENE FONCK

(3)

(7)

Field to an airdrome near Paris by the route of Boston-Halifax, Cape Breton-Cape Clear, Cornwall - Cherbourg-Paris, is about 3,600 miles, the Sikor-

Extract from N. Y. Times Editorial, April 1.

A three-engined plane, designed by the Russian inventor Igor Sikorsky, is

now building on Long Island to be

flown by Captain Fonck to Paris in

June. The model was his choice after

he had made the rounds of French,

English and American shops. The

Frenchman is one of the highest living

authorities on aviation, both as a writer and as a pilot. With extra

wing sections the plane selected is to

have a spread of 101 feet. It will be

equipped with three nine-cylinder French engines and have an estimated

cruising radius of 4,330 miles. An

average speed of 100 miles an hour is

As the distance from Roosevelt

sky plane should make its destination in a day and a half with fair weather. By radio it would be in communication with both sides of the Atlantic.

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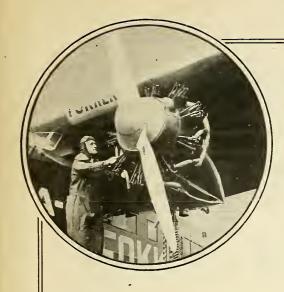
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## AT THE NORTH POLE

HEN Lieut.-Commander Richard E. Byrd, U.S.N., flew over the North Pole recently, he accomplished a feat which has long been the dream of aviators. The fact that his big monoplane was equipped with three Curtiss-Reed propellers offers proof that these propellers are the choice of pilots who demand high efficiency and absolute dependability in the face of severe operating conditions.

### **CURTISS-REED PROPELLERS**

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Name and address



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worth varnishing
is worth
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## The Valspar News

Published by VALENTINE & COMPANY

\* \* \* \* \* \* \* \* \* W E A T H E R R E P O R T

Hot or cold, it's all the same to Valspar

VOLUME 1

JUNE, 1926

NUMBER 1

## Is the North Pole Valsparred?

News dispatches say that Commander Byrd circled the Pole a number of times before he started back for his base in Spitzbergen. He therefore ought to know whether the Pole itself is actually Valsparred or not, a point that has puzzled scientists for years. As nothing was mentioned in the dispatches on this point, however, it will have to remain unsettled for the present.

Perhaps we had better not quiz the gallant Commander too strictly on this point as he has just pulled off one of the biggest stunts in World history, proving his right to the title of World's Champion Arctic explorer.

But we are sure of one point, namely, that his Plane is Valsparred from tip to tip which explains, perhaps, why it returned home unscathed. We'd surely like to think that the Pole also shines in its coat of Valspar!

Anyway we have the satisfaction of knowing that most of the equipment that has made the frozen North negotiable is Valsparred—sleds, skis, snowshoes, tobaggans, gunstocks, etc.

All of which inclines us to the opinion that the Pole must be Valsparred!

#### OTHER FAMOUS VALSPAR FLIGHTS

What is Valspar's proudest boast? That it has been identified with the greatest achievements in aeronautical history.

NC-4, first airplane to cross the Atlantic. Valspar protected the propellers and all other varnished parts of the NC-4. British Distance

British Dirigible, R-34, first dirigible to cross Atlantic. Her propellers also were Valsparred.

T-2: World record for nonstop flight across the United States: 2600 miles in 27 hours, 56 minutes. We count it an honor that the T-2 was Valsparred.

Round-the-World Flight. From stem to stem all wood, metal and fabric surfaces of the Round-the-World planes were Valsparred. Despite terrible conditions, the original Valspar finish remained intact until after the planes returned to the U. S.

Curtiss Racer. In the Pulitzer Trophy Race at Mitchel Field the Valsparred Curtiss Army Racer broke the world's record for a 200 kilo closed course.

Shenandoah. To prevent the precious helium from escaping, her gas cells were Valsparred.

# VALSPAR FLIES TO THE NORTH POLE!

Epochal achievement by U.S. N. flier amazes world and clinches America's claim to the North Pole

On Sunday, May 9th, 6 P. M. Greenwich Time, Lt. Commander Richard E. Byrd dropped from the blue sky, after a record flight to the North Pole and back in the incredible time of fifteen hours and fifty-one minutes.

This astounding feat was made in the Josephine Ford, a Valsparred Fokker plane! The identical course laid out beforehand by Commander Byrd was followed to the Pole without the slightest deviation. He made a bee-line to Verlegen Hook, New Friezeland, thence to Amsterdam Island and home.

Commander Byrd flew at an

average height of 2000 ft. on the outward journey, and 3000 ft. on the return, making extra speed on account of the lighter load.

Although the intrepid explorers circled the Pole, several times, they report no sign of life in this region.

Commander Byrd declares that there are plenty of stretches of smooth ice where a ski-shod plane could safely alight. Pilot Floyd Bennett, who accompanied Commander Byrd on the flight, predicts that it will soon be a common occurrence for planes to traverse the Arctic, alighting and soaring at will.



Lt. Commander Richard E. Byrd (From drawing by N. Y. Times)

## Anthony Fokker praises Valspar

Anthony Fokker, President of the Fokker Aircraft Corporation, uses Valspar on his famous Fokker Planes simply as the result of his absolute confidence in the dependability of this varnish, proved by years of experience.

Mr. Fokker writes: "The Fokker three-engined monoplane supplied to Commander Richard E. Byrd for his flight to the North Pole was finished with Valspar. The wings of this ship are entirely covered with wood veneer and for weatherproofing this construction, Valspar is relied upon entirely. It is also used, both pigmented and clear, on

part of the fabric work of the fuselage and tail surfaces.

"You will realize that under the extreme conditions which airplanes are likely to meet in the frozen North, the weatherproofing and finishing material plays a most important part. The fact that we are relying on Valspar to such an extent is a sufficient indication of what we think of it.

summent indication of what think of it.

"During the past five years Fokker Planes, with this same type of veneer wing finished with Valspar, have been in use on six different air transport lines in Europe. A number of these machines have individually been in service for between 2500 and 3000 flying hours under all conceivable weather conditions and they are still in fine shape, in everyday use."

#### Valspar—the perfect varnish for airplane use

Test after test has proved the supremacy of Valspar—proved that it outlasts all other varnishes. Why? Because Valspar's unusual durability, elasticity and absolute waterproofness enable it to resist the hardest kind of wear which spells destruction to other varnishes.

Valspar is the only varnish that withstands the most exacting conditions of airplane service. That sums up the opinion of leading designers and manufacturers of aircraft the world over.

Elastic enough to withstand constant exposure to rain, sun, snow, salt water, and sudden changes of temperature—tough enough to resist scratching or abrasion—Valspar is the ideal finish for all wood and metal surfaces. Today it is recognized the world over as the perfect varnish for airplane use.



## AIERO DIGEST

Vol. 8 No. 6

JUNE, 1926

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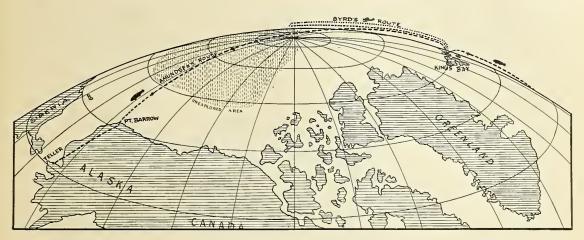
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The "Josephine Ford" and the "Norge"—first aircraft to fly over the North Pole.

## THE FLIGHTS over the POLE



A IRCRAFT has conquered the Pole! The successful completion of two flights over the North Pole, made during the past month, has proved the value of the airplane and airship for arctic travel.

Every American is proud that one of his countrymen was the first to realize this dream of our generation—to fly over the North Pole. We have been pioneers always—first to fly; first to fly around the world.

When Lieutenant Commander Richard E. Byrd, U.S.N., and Floyd Bennett, his pilot, returned to Kings Bay, Spitzbergen, at 4:20 p. m. on May 9 after circling the Pole three times in a flight of 15 hours and 51 minutes, they received the ringing ovations of the entire world.

Their plane, the "Josephine Ford," a Fokker monoplane equipped with three Wright engines, covered 1600 miles of arctic ice and snow and upon its return still had fuel enough for five and a half hours.

It is a combined triumph of the tremendous daring of man and the worthiness of aircraft even in the extreme cold.

Instead of establishing a base at Peary Land as previously announced, Commander Byrd very strategically decided to make the flight direct to the Pole from Spitzbergen thus avoiding the uncertainty of arctic landings. The first route would have required four ascents and four landings, all of which would have added greatly to the risk.

The course taken was over Amsterdam Island to the Pole, thence to Verlegen Hook, New Friezeland, west to Amsterdam Island, and return to Kings Bay. The navigation was perfect all the way.

According to the special dispatch to *The Times*: "They were favored by continued sunlight, and there was never the slightest fog, enabling Commander Byrd to use his sun compass and bubble sextant and obtain the most accurate observations possible. Bennett and Commander Byrd alternated in the piloting. Bennett refilling the gasoline containers while the Commander piloted and navigated.

"When they were within sixty miles of the Pole the oil system of the right-hand motor began leaking badly. Both agreed, however, to continue the flight to the Pole even if they went on with only two motors. To their surprise the right-hand motor continued to work effectively despite the ruptured oil tank, and when the Fokker returned to Kings Bay all three motors were still hitting perfectly.

"He saw not a single sign of life after entering the ice-pack, which begins immediately north of Amsterdam Island and apparently touches Verlegen, reaching much farther southward than usual. No birds, seals, polar bears, nor traces of them were seen, neither any indication of life throughout the course."

Motion pictures and still photographs were taken by Byrd of the top of the world.

It was just ten days after the "Chantier" steamed into Kings Bay (having left New York on April 6) that this great flight which heretofore seemed impossible, was accomplished.

The second air victory over the North Pole was achieved on May 13 at 8 o'clock in the evening when the Italian-built semi-rigid dirigible "Norge' landed at Teller, Alaska, about 60 miles northwest of Nome. In the dirigible flew Roald Amundsen of Norway, Lincoln Ellsworth of the United States, Umberto Nobile of Italy, the designer and builder of the "Norge," Lieutenants Hjalmar Riiser-Larsen, Emil Horgan, Oscar Omdal and Gustav Amundsen, the explorer's nephew, of the Norwegian Navy, Mechanician Natale Cecioni of Italy, Meteorologist Fenn Malmgran of Sweden, their eight aides and dog Titina.

Never in the history of exploration has there been such an experience as Amundsen and his companions went through in crossing the Arctic Sea from Spitzbergen to Alaska by way of the North Pole, covering 2700 miles in 71 hours.

They left Kings Bay, Spitzbergen, on May 11 at 8:55 a. m. with a load of twelve tons. They passed over (Continued on page 393)

### AIR-HOT AND OTHERWISE

IDAP," said the old nigger, after having tightly hitched his mule, giving him a forceful

"Can't you see he's hitched?"

inquired his friend.

"Yaas," said the first colored gentleman and hit the mule again. "I hitched him. Gidaaaap."

Recently the bureaucrats of this great and glorious nation have exhibited the same sort of Ethiopian intelligence. The bureaucrats of the Army and Navy have assisted. It has been great team work,

The War Department, the Department of the Navy, the Government itself, speaking collectively, generally and from the four points of the compass, declare that civilian flying as well as military flying is to be encouraged. Especially it urges aviation skill and knowledge on the National Guard. It offers flying pay.

With regard to this, consider the following few words, an Executive order from the Militia Bureau of the War Department, dated October 12, 1925:

"Increased pay for members of the National Guard participating in aerial flights in connection with armory drill training . . . shall be," etc.
Great, eh? Oh, we're the people!

The War Department made up an order which was issued as "Executive" or coming directly from the President. It reads:

"A captain, lieutenant or enlisted man belonging to the air service organization of the National Guard on duty requiring him to participate regularly and frequently in aerial flights who, while in attendance at an ordered assembly for drill and instructions of his organization, participates in one or more aerial flights, shall receive an increase of 50 per cent in pay to which he is otherwise entitled for attendance at such assembly."

This gave the National Guard boys that airy feeling. To draw flying pay in the regular army, an officer must fly four hours or make 10 flights a month, but he has three months to do this work in. If illness or anything else prevents him from this flying duty, he can do it all at once at any time before the expiration of the 90-day period and get his flying pay.

Everybody in the National Guard flying service supposed that they eventually would also get extra flying

But the ruling of the Comptroller General of the United States dated April 8, 1926, in reply to three questions submitted with regard to the executive order of October 12, 1925, declares that unless the flying of National Guard officers is done within the prescribed hours of "ordered assembly," National Guardsmen are not entitled to flying pay.

In New York and most other places where there are flying units of the National Guard, "ordered assemblies"

Stop Kidding the National Guardsmen

The Laugh from the Pole Clipping our Eaglets' Wings By Frank A. Tichenor

are held generally between the hours of 8 p. m. and 10 p. m.

In the War Department. regulations covering the operations of air service units of the National Guard (Page 7, Section 11, Night Flying), these words appear:

"Except during the annual 15-day period of training, night flying or flights which require landing after

dark are prohibited.'

Thus vanishes the hope of the National Guardsman that he is to have an opportunity to learn flying and draw flying pay. Thus, also, vanishes the hope of the nation that through this method aviation will be encouraged among our citizen soldiers as 95 per cent of our National Guard officers will find it absolutely impossible to qualify for flying pay under these regula-

Suppose from now on it should be decided to hold the "ordered assemblies" on Saturday afternoon or Sunday, although the latter would be virtually impossible in the United States, public sentiment being against it, and a wind storm of sufficient force prevented the making of a flight during the ordered assembly hours, then the National Guard officers would lose the only opportunity of making flying pay under this ruling of the Comptroller.

The President's Aircraft Board recommended: "considering the extra hazardous nature of flying, we believe that the principles of extra pay for flying should be recognized as permanent in time of peace.

This is another beautiful example of how the Powers that be in Washington, departmental politicians, are deliberately endeavoring to strangle the National Guard air units and to prevent the development of aeronautics.

Oh, say, can you see by the dawn's early light the American National Guard air squadron advancing to the fray? Not unless they risk court-martial in order to learn how to fly, you can't. And there's been enough court-martialing in America's air history.

Yet the object of a patriotic War Department must be to stimulate flying competence among America's citizen soldiery. Which impels me to arise and put to the inmates of the American insane asylums, gathered in convention at the national capital, that immortal and historic question: "Who's looney now?"

Once a tremendous mob hurled brickbats at the National Guard called out to maintain order. The plucky citizen-soldiers stood it admirably and never gave an inch or fired a shot. Then the crowd started to hurl insults and the National Guard went into action.

Americans, in or out of uniform and especially when in, hate to be kidded along. One therefore covets a cross-section of the National Guardsman's mind as he realizes that he is being spoofed.

(Continued on page 388)

## AMERICA NEEDS AIRCRAFT

A STOUNDING progress has been made in aeronautics. The whole world is aroused to a knowledge of the place that aircraft has made for itself, both in peace and war. No one would be so foolhardy at this time as to predict its future or its limitations, either in the pursuits of peace or in the prosecution of war.

But this much is generally agreed to—so great has become the utility of aviation that its development is now a national problem.

We are living in what has been termed the mechanical age. Therefore it behooves us to give great consideration to those of its developments which possess qualities reasonably sure to contribute materially to the general welfare. Aviation must be an important factor in the industrial progress of the nation.

Without forgetting its value in the national defense we should interest ourselves particularly in its application to the broader aspects of peace-time use.

The true mission of aviation is commercial. If its only use

were that of an agency of destruction, it would be much better for mankind if flying had remained a dream.

However, the reverse is true. Airplanes designed, built and operated in this country can cross the continent, from coast to coast or from the Great Lakes to the Gulf, in a single non-stop flight; they can reach altitudes of more than seven miles above the ground; they can dart through the air at a speed of five miles a minute; and they can carry the mails between New York and San Francisco in a single day.

An agency of transportation with such potentialities as these is one which demands the immediate and best thought of our industrial leaders. Assuredly the peak performance of to-day will be the common practice of tomorrow.

Therefore our aircraft engineers and manufacturers break away from the limitations of purely military and naval types, and design planes especially and exclusively fitted for commercial projects. The same common sense employed in the development of surface methods of transport must rule in the development of air navigation.

The most economical and suitable types for the pur-

#### By Randolph Perkins, M.C.

Member from New Jersey and Chief Examiner of the House of Representatives Special Aircraft Committee



pose in hand must be the goal of our designers. They must be backed by a properly organized manufacturing fraternity in which the experience of years of production in other mechanical fields is utilized to the end that aircraft may be produced at prices which will ensure their profitable use on a large scale.

All of the essentials for the growth of commercial aviation exist in this country to-day in a measure present nowhere else. We have a wealth of raw materials especially suited to aircraft building; we have enormous numbers of mechanics skilled in the use of machines and tools of precision; we have a host of men qualified for executive duties and competent for high-class management quantity production. There is not a single problem of aircraft design and manufacture which our present resources are not fitted to solve.

Discouraging delay in the development of air navigation in America is the only "mystery" in connection with aviation today, and that "mystery," it may with truth be said, is not a

"mystery" at all. It is merely a state of mind.

The truth of the matter is that business men generally have not investigated the possibilities of the use of aviation in their own industries. Those who have done so are employing the airplane greatly to the economic advantage of their individual enterprises.

The glory of our industrial rise among the nations of the earth is because of the American business man. He always has faced fact, fought it, mastered it. He must now turn his attention to the complete conquest of the air.

The potential value of air navigation is not confined to transportation. Some of the most remunerative activities in which the airplane is the major factor will simplify and speed up operating details within the essential industries to an extent literally revolutionary. Cattlemen, lumbermen, miners, railroad engineers, surveyors, and many others are employing aviation with astonishing economy in both time and money.

Given safe, reliable, and economical equipment, I am confident that the business men of this country will utilize commercial aviation to the full. Such has been

(Continued on page 390)

### MY NEW YORK - PARIS FLIGHT

RECENTLY, on arrangement by Aero Digest, I broadcasted my voice through the air from New York to Paris. Presently, my body will hurl overseas by the same route, from the same starting place to the same destination and through the same medium

This, the first non-stop flight from New York to Paris, which I intend to make in the early summer, will be a marked step forward in the progress of air navigation. With the Sikorsky plane powered by the three French motors, which are the l as t word in aeronautical achievement from the point of view of technical and scientific advancement, I feel confident of success.

My expectations include the plane's ability to take off with sufficient fuel for a flight of 4,330 miles, although the actual course that will be followed is about 3,600 miles. Taking off from Roosevelt Field, Long Island, the route lies by the way of Boston, Halifax, Cape Breton, Cape Clear, Cornwall, Cherbourg and Paris,

At an average speed of 100 miles an hour, the destination should be made in a day and a half with fair weather. By radio we will be in communication with both sides of the Atlantic all of the time.

The flight was not projected as a stunt but as a means of proving that the science of aeronautics has progressed to the point where such a non-stop flight can be undertaken with virtual certainty of achievement

It has been made possible through the generosity of the Argonauts, Inc., composed of the following members: Robert Jackson, Concord, New Hampshire; Arnold C. Dickenson, Fitchburg, Massachusetts; Colonel Harold E. Hartney, vice-president of the General Airways System and a world war ace; and Igor I. Sikorsky, the designer of the first multimotored plane, who is now building his thirty-fifth for the New York-Paris flight.

Another man who is interested in the flight is Rav-

By Captain René Fonck



Decorations received by Captain Fonck:

French—Commander de la Legion d' Honneur; Medaille Militaire of France; Croix de Guerre (30 citations to the Order of the Army). U. S. A.—Distinguished Service Cross. England—D. S. O.; Military Cross with Silver Bar; Military Medal. Belgium—Commandeur de la Couronne de Belgique; Officer de l'Ordre de Leopold; Croic Guerre of Belgium. Italy—Officer of St. Moritz and Lazare; Military Valor of Saroy. Romania—Michel le Brave Medal of 2nd class. Serbia—White Eagle; Karageorgewitz. Poland—Military Cross: Order of Stanislas. Spain—1st Knight Merite Militaire. Portugal—Officer de la Tour et de l'Eppe; Croix de Guerre. Japan—Order of the Sun. Sweden—One Swedish Decoration for Valor.

mond Orteig, owner of the New York hotels, Lafayette and Brevoort, who offers \$25,000 to the man who builds the first air bridge from New York to

In planning this flight, I particularly wanted to show the existing friendship on the part of the French aviators for their American comrades. I have always had and always will keep the fondest memories of the heroic conduct of the American aviators under my command during the war. It is in recognition of this that I insisted on having with me an American pilot as assistant and an American radio expert.

In coöperation with American aviation, I am trying to bring closer together the two nations, so as to strengthen existing friendship and foster the cause of aeronautics in which field America and France, as pioneer, have made the most important contributions.

Aviation, although born before the war, developed mainly during it and as an arm of war.

I am glad that I can now use my experience attained as a war aviator in the development of commercial aviation which will mean so much to the peaceful future of economic life. Air transportation, bringing speedier communication between the nations of the world, now so far apart, will be a paramount factor in establishing universal peace.

I have great hopes of being successful in this flight so that once more the American and

French flags will be triumphant in a mutual venture for the glory of these two great liberty-loving republics the United States of America and France.

Both France and America have been most successful in regard to flights of long duration.

The longest duration flight without stop, 2,734 miles, was made by two Frenchmen, Drouhin and Landry, and the longest straight-away distance covered in one hop was on the flight made by Kelly and Macready from New York to San Diego, 2,517 miles.

## THE ALL-METAL SIKORSKY

IKORSKY'S thirty-fifth airplane, the result of his vears of construction princi-

Ву experience in eighteen George F. McLaughlin

pally on large planes, is now nearing completion at Roosevelt Field, Long Island. This plane, known as the S-35 "Special" model, is to be used by Captain René Fonck on his flight from New York to Paris this summer.

The S-35 was designed as a passenger and freight carrier, equipped with three Gnome-Rhone-Jupiter engines of 420 h.p. each, driving tractor propellers. Its normal wing span is 76 feet, but for the New York-Paris flight, 12½ feet wing panels are added at each side, bringing the total span to 101 feet. The additional wing area is necessary because of the extra weight of tuel to be carried on the non-stop journey of more than 3.660 miles.

· The general specifications of the S-35, as arranged for the New York-Paris flight, are:

Span, upper wing, 101 feet; lower wing, 76 feet. Height, 16 feet. Total wing area, 1095 square feet. Weight empty, 8000 pounds. Loading per square foot of wing area, 21.85 pounds. Loading per h.p., 19 pounds. The crew of three (two pilots and one navigator) will weigh 510 pounds. Special equipment will weigh 490 pounds.

Fuel for the wing motors will be carried in the rear part of the engine nacelles in streamlined tanks. The total weight of fuel and oil will be 15,200 pounds. The total weight of the machine, as it takes the air for Paris, will be 24,200 pounds.

The pilot's cockpit is equipped with dual controls. It is entirely enclosed, but sliding windows are located at the top and sides. A door at the rear of the pilot's cockpit leads to the cabin, which has a space for a cargo of 450 cubic feet of freight or for seating twelve passengers in comfort. The cabin is 4 ft. wide, 6 ft. high and 151/2 ft. long. Two doors at the front of the cabin lead to the lower wing, so during flight mechanics may reach the two engines, carried in streamlined nacelles,

if they should require adjustment. At the rear of the cabin. one door is located at the left side for entrance while the ship

is on the ground; another door at the rear leads to the lavatory. Sliding non-shatterable glass windows 18 by 24 inches are arranged along the cabin which is finished in mahogany, fitted with electric ceiling lights, ventilators and heaters.

Radio equipment for sending on regular, waves and short waves, will be used during flight in an endeavor to keep in communication with the surface ships and land stations. In addition to the radio, weighing 160 pounds, other equipment to be used especially for the flight will weigh 330 pounds,

Owing to the use of self compensating rudders, it is possible to fly the ship on any of three possible combinations of two motors, without affecting the ease of control. The all-metal feature is another of the outstanding points of the design. The entire framework of the body is composed of duralumin channels, tubes and plates, assembled with steel bolts and rivets. No welding is used throughout the entire structure. There are no wires or structural members crossing the cabin space and the cabin is braced with diagonal channel members, resulting in a particularly rigid body in which vibration is not apparent. Fabric is used for the outside

The wings, which are made up entirely of duralumin. are of the most advanced type of construction. Beams are built up to I-section formed by means of four dural angles riveted to the central web of flat sheet dural. The ribs are formed of light sheet dural channels and angles. In plan form the wing tips taper to a knife edge. High tensile strength tie rods are used in the internal drift bracing system.

Ailerons, hinged on auxiliary beams aft of the main wing beams, taper at the tips and mortise into the wing. The tail surfaces, built like the wings, are fabric covered. The stabilizer is adjustable and may be used (Concluded on page 394)

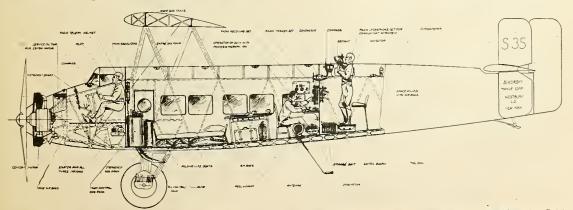


Diagram showing interior arrangement and equipment of the three-motored all-metal transatlantic type Sikorsky S-35.



#### FLYING WITH THE SEALING FLEET

THE forward march of aeronautics continues as the modern machine of the air ruthlessly rips holes in tradition, overrides the barriers of conservatism, breaks down the walls of scepticism, and by its clearly demonstrated efficiency sweeps aside opposition and revolutionizes the most ancient method-bound industries.

The first expedition from Newfoundland to the sealing grounds took place in 1763, and,

though steam vessels modernly equipped have taken the place of the old wooden sailing ships, the methods of the hunt have remained unchanged down the years. The crew of the sealers, made up of the hardiest and most intrepid fishermen of the island, naturally feel that they alone know the northern ice fields and their problems, and are characteristically conservative towards the introduction of any new methods. Their attitude towards an interloper setting out to teach them how to seal can readily be imagined. They are, however, giving way slowly and reluctantly.

Newfoundland is the home of the hair seal industry. Each year, at precisely the same time and in almost exactly the same spot, the two great herds of seals, the harps and the hoods, gather together. Up to the month of February the seals roam the ocean, but when February comes around they settle down upon the ice floes. Instinct brings them back to the same spot year after year and their whelping place never varies in position more than a few miles. It is north of the 50th parallel, between Cape John and Bell Isle, about fifty to one hundred miles off land.

The mother seal brings forth her young about the end of February, and they grow and develop with astonishing rapidity. From the purity of their pelts the young animals are known as whitecoats. The fur is thick, almost wooly, and as soft as swan's down, but these properties of the coat are lost as soon as the young animals take the water. For fur purposes the animals must be secured within a few weeks of birth, and it is

## E. L. Chicanot



Returning from a seal-spotting flight.

upon this that the seal hunt centers. The killing of the seals is permitted from dawn on the 13th of March.

Every spring for the last 163 years the sealing vessels have sailed or steamed out of St. Johns to prosecute the search in a manner that, up to the last year or two, has remained almost identically the same. The actual business of locating the seals is very much like a game of hide-and-go-seek as the expansive ice floes upon which the

young seals have been born break up and drift in all directions. The vessels merely make the best of their way north, breasting the icy seas, battling with blizzards, snaking a slow and perilous way among the ice does. Each captain has his own idea of where the seals may be that particular spring and heads in that direction, making sometimes only a few miles a day through the ice fields, whilst a vigilant lookout is kept for indications of the seal herds.

These indications are several, one being the formation of ice; experts are able to tell the length of time ice has formed and so therefore the probability of floes in the neighborhood containing seals. Still more reliable indications are "blow holes" or "bobbing holes." The former are apertures kept open by the older seals coming up periodically to breathe, and the latter, vents beside the young seals through which the mother disappears on her expeditions for fish food, which at times take her thirty or forty miles away, and to which she unerringly returns.

In the past, observation for such signs has been made by scanning the icy prospect with powerful telescopes from barrel-towers in the masthead, eighty feet above the deck. They were very easily missed. Small openings in the ice are not easily seen and whitecoats are practically indistinguishable against the white background. It is even difficult at times to see the older, darker seals where the ice is hummocky. Often vessels have steamed for weeks without encountering the seal patches, passing within a few miles of them.

The possibility of utilizing the airplane in sealing was first suggested to the sealer operators of Newfoundland when the baby "Avro" which was specially constructed for the Shackleton arctic expedition was left behind and remained long unutilized. The owners of the sealing vessels finally jointly purchased it, and in 1923 brought a pilot from England to fly it on the expedition. The aviator tackled a tough problem when he joined the sealing fleet. The attitude of the sealers towards this innovation was pronouncedly sceptical, not to say a trifle hostile. As the captain of the vessel is in absolute command on the expedition, the fleet carrying the "Avro" returned from the hunt with the plane still fastened aft, having never been flown.

In 1924, the machine was sent out again on another vessel, with Captain B. Grandy, a veteran airman of the Great War, a Newfoundlander and a former sealer commander, as pilot. The fleet's attitude towards the plane was unchanged. The expedition, however, cruised a long time without finding any trace of seals, and grudgingly the captain of the vessel consented to stop long enough to land the plane and give Capt. Grandy the opportunity for a flight. Only one flight was made but it was responsible for locating and putting the sealing vessels in touch with several large patches of seals, one four miles wide and eight miles long, containing over 50,000 seals.

The following year the sealer owners secured the services of C. S. Caldwell, an experienced Canadian flyer, who in 1924 had flown scores of passengers on Canada's first commercial air service over unsurveyed Ontario and Quebec into the gold field of Rouyn, and in the summer of 1925 piloted a plane for a Detroit prospecting syndicate over unexplored British Columbia and the Yukon. He was permitted to make two flights. On the first he saw no seals but brought back information which indicated that the vessels were heading in the wrong direction. As a result of rectifying this on the second flight he located the seal herds after only ten minutes flying.

So gratified were the sealer operators with this success that they secured Mr. Caldwell's services again this year. On March 5th of this year the sealing fleet left St. Johns with the modern machine of the air sitting conspicuously and incongruously on one of the

vessels. Northward the sturdy little vessels steamed, making a difficult and hazardous way among the ice floes, at times having to blast an ice field apart where progress was altogether barred. For six days they made their few miles a day northward before the lookouts spied a solitary seal.

It was taken to

be merely a stray animal which had drifted far away from the main patches. The sealer captains were of the unanimous opinion that they were too far south to be in the neighborhood of the seals. They were all in favor of continuing north. beautiful day for flying, however, and finally the captain of the vessel carrying the plane succumbed to Caldwell's importuning that he be permitted to make a flight. He was away half-an-hour, flying ten miles from the ship, and located a floe, approximately thirtytwo square miles in extent, covered with seals. It was shortly after noon when he returned with his report, the other vessels were wirelessed, and by evening all had come up to the vicinity.

Killing could not lawfully commence for two days more and as if to guard against an over anxiety to seize the prize within their grasp, a howling, blinding blizzard set up, which raged unremittingly for two days, drifting the vessels with the floes some fifty miles. On the night of the second day it subsided and with the first streak of light showing in the sky, the crews of the various vessels, numbering about 160 men to each ship, were out upon the ice making their way towards the seals. The work of slaughter commenced. crews went, collecting the skins in pans, marking them with the owner's flag, until the patch was exhausted and a return was made to the vessels, picking up the pans en route and dragging them behind.

Under ordinary circumstances the vessels would now have had to start out roaming again among the ice floes until other patches were located, quite largely a matter of luck and at best a very slow and perilous process. After the success of the first flight, however, it was easier to secure permission to make a second, and on March 16th the pilot took the air again. He was back within thirty minutes with word of a large patch of seals just a few miles away, but reported a mass of difficult ice intervening. As a result of his observation he was able to point out the best way of getting through this, consequently his vessel was able to reach the seals much sooner than the other vessels which were wirelessed.

The third flight which was made on the same day, was in response to a call for assistance from two vessels which in endeavoring to get up had become jammed

in the ice and were unable to get to the patch and share in catch. The airman was responsible for putting them in touch with another large patch of seals a few miles from them.

Always being first on the scene accounted for a record catch for an individual vessel-48,421 pelts, which had not been equalled for years.



Clearing a runway for the plane to take off.

### A NOD AND A WINK

ERE'S a chronicle of aeropautical doings at Wichita, Kansas, out in the great open spaces where men are men; and punk Scotch, cut four ways, is \$15 a quart. Nothing as thrilling as this western yarn has been written since the Kansas Agricultural Society startled the reading public with its "Survey of the Benefits of Bone Fer-

tilizer on Sandy Soil," in two parts and an appendix.

To appreciate fully the pulsing drama of aeronautics in the great open spaces, it is necessary to sketch briefly what we literary craftsmen call "local color," and what the editor will call "padding," at so much

per word.

In the first place, all this "where men are men" stuff has sadly deteriorated. Along about the time Uncle Joe Cannon lit his first cigar and Kansas had its first cyclone, the men may have been bold bad Bills, but they're merely sweet Williams now. Things have been done to them until they have grown so tame that in a suffrage parade a Kansas husband has been seen carrying a banner for his wife inscribed, "Men have votes. Why not I?"

These men were started on the road to ruin when Carrie Nation went out wrecking saloons with a hatchet; and now they've slid so far that they've let the W. C. T. U. erect a stone monument to Carrie right in front of the Wichita Union Station. Hardened traveling men, seeing this memorial to the fall of man, have been observed to burst into tears and invariably catch the next train out without thought of its destination. For Carrie took the saloon away from the men of Kansas years before the Volstead plague hit the country, making 101 hypocrites bloom where only 1 bloomed before.

Now the men are so cowed—Kansas always was a great cow state—that a Wichita citizen, giving me a drink in his home, begged me not to whisper that he drank, as it would ruin him socially. When I told him that in New York good rye admitted one to the social register, he broke down and wept bitterly. It was several minutes before he was sufficiently composed to resume his tatting.

Having always lived East where men aren't expected to be much—and usually live up to expectations—I had arrived at Wichita fearing that a bunch of wild cowboys would casually be shooting up the town, and that I might have to duck for cover. I needn't have worried. I was as safe as an old maid at a prayer meeting in Boston. Safer, come to think of it. All that happened to me was that a lady badged "Travelers' Aid" came up and gave me a tract and asked me if I had a place to stay, and if I'd like to attend the Baptist Church on Sunday. I told her I was a quiet, married man and didn't go in for amusements.

Up!ifting Kansas

By

Caldwell

The town, I discovered, was in a furore of excitement. A ferment, I would have said, only that word is considered intoxicating in Kansas. The opening of Wichita's Municipal Airport and the christening of an air mail plane was scheduled for Sunday and everybody was just wild. It was the most thrilling thing that had happened in Wichita since

the time when a president of the Swallow Airplane factory bit a stockholder in the Travel Air Company.

On this momentous Sunday, the sun and I rose as usual—though not together. I haven't seen the sun rise since the War. Anyhow, the sun got up a bit ahead of me and shone brightly on the flying field, covered with a green carpet of alfalfa and a mortgage. Morning dew sparkled on the grass and interest due glistened on the mortgage. Here and there wandered a he-man of Kansas, his wife right with him, telling him what to do and especially what not to do.

Did you know that the sale of cigarettes in Kansas is prohibited by law? It is. A few hardened characters buy bootleg cigarettes but daily prayers are offered for these horrid backsliders. Very docile the men looked as their wives herded them about the flying field.

The tin hangars shone like burnished silver in the sunlight. (They didn't, as a matter of fact, but these people here expect me to say something about their confounded hangars—so that's what I've said). A few mechanics were contentedly cropping grass, pausing now and then to sniff the air, then stooping again to browse on the succulent herbage.—Shucks! I've got mixed and have quoted from a new flying story by the Secretary of the Navy.

As the day advanced, a crowd of 2,000 people gathered, three of whom believed in evolution, and 1,997 of whom believed that Jonah swallowed the whale or vice versa. That's a fair average for Kansas. However, it was a great triumph for the evolutionists to get that many fundamentalists out of Sunday School, especially as school was free and admission to the field was 50 cents.

The scene was most impressive. It reminded me of the day I opened my own field, with a tremendous crowd and a band. When we closed a few months later, the crowd was not so tremendous—just myself and the sheriff.

To begin, the devoted band rushed out into the field and proceeded to blow itself red in the face. Then came the christening of the N. A. T.'s Curtiss Carrier Pigeon—there's a beautiful bird for you, if you're a nature lover. It lays square eggs. Well, anyhow, a very sweet young lady hit the Pigeon on the nose with a bottle of Arkansas River water, christening the plane "Miss Wichita," a sister ship to "Miss Omaha," in (Continued on page 391)



The Carrier Pigeen taking off from Chicago to Dallas over the National Air Transfort route.

P. & A. Photo.

N 1832, there was a sort of railroad running from Philadelphia towards New York. It got only about as far as Trenton. On a route paralleling that railroad was a man who had a contract with

the Postmaster General to carry mail on horseback. He was paid so much each trip, and carried the mail in bags across the horse's back. This man conceived the idea that it would be better to leave his horse at home and take the bags of mail into the railway car. This worked all right for a time, but one day the train broke down and somebody reported him to the Postmaster General. He immediately received a letter from the Postmaster General (of which I have a photograph

and which is a matter of record) stating that it had come to the attention of the Post Office Department that he had broken his contract by getting off his horse and carrying the mail in a train, that nobody had so little sense as to think that trains would ever run regularly enough and fast enough to afford the kind of communication which the Post Office must have and that—if he did not want to lose his job—he had better stay off the train and get back on his horse.

Now, we are going to take a small part of the mail off the trains, but we are going to put it in the air. We will soon have air express and, just a little later, we will have passengers riding in the air, too. I will be disappointed if the good Lord doesn't let me live long enough to see passengers get into one of our airplanes at Dallas in the evening

#### Ву

#### Colonel Paul Henderson

General Manager, N.A.T., Inc., Former 2nd Asst. Postmaster General in charge of Air Mail

ture holds, nobody knows. Probably the most interesting thing about this business is that nobody knows very much about it. The airplanes which we have today look very fine to us, but they are going to look very crude to us just a few years from now. We are just opening the door to the possibilities of the airship. The day is not far distant when passengers will be able to go anywhere they wish

morning.

to go without danger of discomfort and as fast as they are entitled to travel. All this cannot come about in just a little while. It will take a long time, first of all, just to

and arrive in New York next

The development of this

particular air mail route and

all routes has been very inter-

esting indeed. What the fu-

make this business pay. New York, on the morning of May 13, received 40,000 letters collected along the National Air Transport route between Dallas and Chicago. Sixteen hundred pounds of mail flew north and 675 pounds flew south in the initial flights on May 12. This was four times as much mail as ever was in the air before at one time on any line, governmental or civilian, in the history of the world. The southwest is placed practically in overnight communication with the east. The amount paid on postage for the cities along the route—Chicago, Moline, St. Joseph, Kansas City, Wichita, Oklahoma City, Ft. Worth and Dallas-was \$8,411.-14. Our first day's traffic convinces us that air transportation is at last a real business.



John J. Mitchell, Jr., treasurer of N. A. T. and Postmaster Arthur C. Lueder, Chicago, at the opening of the Chicago-Dallas route.

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#### YOU CAN'T HOLD IT DOWN!

THE United States today has several interesting things to contemplate when it turns its eyes upward to the air and its thoughts Washingtonward to examination of the service which its salaried and liveried servants, Department heads, Army and Navy chiefs and General Staff are accomplishing for it.

The General Staff errs when it regards itself as an immovable body. But the public does not err when it delightedly realizes that American aviation has become an irresistible force.

When the latter really comes into contact with the former only one thing can happen.

But that will be aplenty.

Remember the Lilliputians trying to bind Gulliver. The efforts of the ivory-domed staff Buddhas to hold aviation down are just like that.

Not so many years ago a certain eminent horse-lover tried to start a movement in New Jersey to curb the use of automobiles because they worried his trotters and made the roads dangerous for carriages and wagons. He wanted motor cars restrained, perhaps prohibited.

The galaxy of prehistoric pterodactyl puffaroos who

now oppose American developinent of an art which truly is the child and should be the especial pride of the United States presently will be deflated by a careless gesture of the public mind.

That gesture will be a forward thrust of fingers punching with a pin. The obstacular puff-bodies will collapse with faint, almost inaudible pops, and a slightly musty but unimportant odor will pervade but not really pollute

surrounding atmospheric areas. Soon it will be gone, forgotten.

These men, themselves stuffily absurd and comic in an antique way, are what the foreign world is seeing and is laughing at. With the best personnel in the world we slip behind in the art which we ourselves created.

When the people of the United States, by the grace of God created free and independent, reach out to get a group of stupid, twisted or otherwise unworthy servants by the collars a spectacle worth looking at invariably ensues.

The people's knee is hard, unsympathetic; the people's hand is strong and heavy; the people's eye is accurate in determining the right place to spank.

Some of the great men down in Washington soon will be eating meals from mantels because of the discomfort of even cushioned departmental armchairs. The American people are long suffering, they are patient, but when they are aroused the expression of their wrath is likely to be thorough.

#### MAKE HISTORY REPEAT ITSELF

N Philadelphia one hundred and fifty years ago there gathered a group of patriots. Independence was proclaimed. Oppression had created liberty. nation was born and history was made.

The National Aeronautic Convention is to be held in Philadelphia during the Sesquicentennial celebration commemorating this historic event.

Make the Liberty Bell ring again. This time to toll the death knell of the Benedict Arnolds who are conspiring against the Air Services of the United States.

Let the memory of Washington, Hancock and Jef-

ferson inspire the delegates attending this convention to take such action as may be necessary to protect and foster this American born art so that it may take its place at the head of our national defense, where it justly and rightfully belongs, and without hindrance on the part of those who wish to retard it from selfish and unpatriotic m o tives. With this accomplished the N. A. A will prosper.



YOU CAN'T HOLD IT DOWN!

## THE UNOFFICIAL OBSERVER

HIS department of omniscience in matters aeronautical is being written a few hours before its editor begins a trip around the world largely by airplane and fast ocean liners. With an even break in luck, bad and good, we think the circuit can be ridden in a little less than 31 days. The present record for the fastest trip around the world by rail and steamer, or by any other means, is 35 days, 21 hours.

We are not just going for the ride. Some 40,000 miles of flying as an aeronautical writer has convinced us that a lot of territory can be covered in pretty good time by airplane. About 5,000 miles of European flying as far east as Moscow last summer, without a forced landing, proved to us that passenger flying has got past the committee and resolutions stage on that continent. A few years ago the Air Mail deliv-

ered us safely from New York to San Francisco.

As we cannot be hampered with any superfluous baggage on this jaunt we will begin right here by discarding the editorial "we."

I sail on the *Mauretania* on May 19 at five in the afternoon. Morris M. Titterington, of the Pioneer Instrument Company, was to have accompanied me, but important business matters connected with his company made it necessary for him to pull out at the last moment.

Arriving at Plymouth early on the morning of May 25 I plan to fly in a special plane to Croydon and reach the English airdrome in time to shove off on a schedule which should take me via Amsterdam to Berlin before nightfall. Resting eight hours or so in Berlin I expect to leave the Tempelhofer Airdrome May 26 at 2:30 in the morning. The remainder of the night is to be spent in flying to Danzig, where I stop 30 minutes for fuel and proceed to Königsberg, the old capital of Prussia. Fifteen hours of flying out of Berlin should bring me to Moscow before sunset of the seventh day after leaving New York.

This itself will be a new time record for communication between the United States and Russia. A miss somewhere may cause me to fall down on this part of the schedule, but from what I learned last year of the Lufthansa service, now comprising Deruluft, Junkers and Aero Lloyd, I don't think failure at all likely.

The most difficult part of the trip begins at Moscow. At this writing it has not yet been determined

Around the World in Less Than Thirty-One Days

By John Goldstrom



how far out of Moscow I may proceed by plane, for the ground organization of the projected Transsiberian Airway is not yet complete. I hope to fly at least to Omsk, about 1100 miles eastward, and there catch a Transsiberian railroad train for Harbin, where I expect to be met by Japanese planes and flown to Yokohama.

To be on schedule I must reach Yokohama before noon of June 7, when the President Madison of the American-Oriental Line leaves for Victoria and Seattle. This is a ten-day boat, one of the fastest on the Pacific. I am looking forward very much to this little ride, as it is not altogether certain that I may not have to cross Siberia or Manchuria part of the way on roller skates.

At Victoria, just across Puget Sound from Seattle, I am to be met by the first of a series of planes which will relay me

to New York, flying day and night, in from 36 to 40 hours. This relay, the details of which will be announced later, is being arranged by Frank A. Tichenor, publisher of Aero Digest and president of the New York chapter of the National Aeronautical Association.

It is proposed to fly me over the new northwestern cutoff to the air mail station at Elko, Nev., from which we will follow the Transcontinental route to New York. Goldsborough is to fly the last lap from Bellefonte, Pa., over the Allegheny Mountains to New York. We will pass over the eastern terminal at New Brunswick, fly down the Hudson River and across the Cunard docks, from which I am starting.

I am receiving the coöperation of every government along the entire route; the Mitsui Trading Corporation of Japan and the Amtorg Trading Corporation of Russia are giving special coöperation.

Postmaster General New and Assistant Postmaster General Glover have assured me of every facilitation along the Air Mail Route. Various commercial air service organizations whose names are yet to be announced are providing planes and pilots for the American section of the trip.

The whole job is an attempt to show that airplanes have, as the New York *World* put it, tightened the belts of latitude around the world.

During the trip this pilgrim's progress will be reported in newspapers in forty-four countries by the North American Newspaper Alliance.

## THE YARNS OF "HELL'S BELLS" O'NEIL

F course," says Hell's Bells, "these Admirals weren't what you might call regular fullsub-caliber Admirals—practise

How The Cub Subs Insulted Six Admirals

#### sized Admirals. They were By James Warner Bellah There was nothing for it so I

the squadron had been sent to the Battle of London to do what was called experimental flying. We experimented on everything. We experimented on staying in town for ten days running, without regular passes. Then we experimented on mixing bacardi and absinthe with martinis. Then we'd experiment on dancing with some of the girls in the neighborhood.

"We were getting along famous until one day the Major blows into the mess with a 'messages and signals' form in his hand and vells for the Adjutant. 'How many pilots you got sober enough to fly?'

"The Adjutant scratches his chin, 'I'll count 'em, sir, and I'll send out a search party for the missing ones.'

"'You better jolly well bleeding had,' yells the Major. 'We've got an inspection party unloading on us at

three p. m. to see some flying. A bunch of four ringed scabs from Bolo House with six foreign Admirals and if I don't see the squadron dressed, polished and sober by noon there'll be another Adjutant in hell by twelve-ten. I have spoken. May God walk with you, my boy."

"Well, the dust flew thick I can tell you," says Hell's Bells. "There was more paint, shoe-blacking, button polish, shaving soap, bromo-seltzer and heifer dust slung around that camp in the next two hours than the whole Guards Brigade would sling in a month of Church Parade Sundays with the King on parade. By eleven-thirty we were looking like staff officers on Paris leave. Then comes the Adjutant with another 'messages and signals' form. 'B' Flight, which was me and five cub second lieutenants, was to

call the five cubs and line them size. It was after one of those wars that we used up on the mess porch. 'Listen,' I says, 'you know me, to have, had stopped, and for want of a better job, O'Neil of the Black Tyrones was the weak sister in my family. You and me are going to escort six Admirals this afternoon and by St. Anthony's Fire we're going to do it! You're going to stand right on this porch till they come! If I catch any of you telling em that the wheels on the undercarriages are run by fan belts, I'll draw your tonsils with fishhooks. If you tell 'em the prop is to keep the engine cool I'll pull off your arms and beat your brains out with them. You're not to say anything but 'vessir' and 'nosir' and you're to say it quick and loud. When you're standing still keep your heels together and your eyes to the front. Keep your gloves on, don't smoke, don't trip over your sticks and if any one of you calls me Bill I'll nail his tongue to a stump and kick him over backwards, Am I lucid? I am, Shut up. That's all. Stand here at attention 'till three o'clock and don't

smile or scratch."

be the escorting party while 'A'

and 'C' were to fly. I swore, I

prayed. I threatened excommu-

nication but he leaves me flat.

"Well, the Admirals came -and you could've knocked me down with a back-firing prop-they were Japs! Little, dinky, four-and-ahalf footers, all smiles and gold lace and little six-inch ivory swords. Death why hadn'st thou smitten me on the Menin Road?

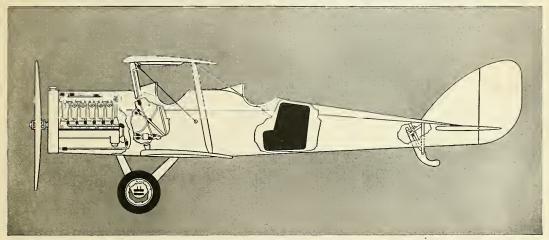
"Off we go, two by two with the Major and the Adjutant and the Doctor and the Equipment Officer up ahead with the be-monocled O.B.E. dressmakers and milliners from the Air Ministry, while I followed next with Admiral Number One and my cub subs follow behind me with Admirals Two to Six. Well, by the time we had gotten through the first hangar I discover what my cubs had discovered long before which is, that all these Admiral blokes can say in English is 'ves' and 'no' and the (Continued on page 389)



"How'd you like to take a flying zoom at the moon?" And the Admiral grins and says, "If you please, Honorable, I think!"



#### GOODYEAR PROVIDES THE RUBBER



BLACK areas show where rubber is used in airplane construction. Goodyear makes hose and molded rubber connections; tires, tubes and flaps; streamline windshields; fuel tank covers; tail skid and axle bumpers; grommets; rubber floor matting

FLAWLESS metal ... true wood ... stout fabric ... and good rubber! These make the airplane.

Rubber tires, of course. As big as they must be. As small as possible to reduce resistance. Tough, yet light. Able to take the terrific smash of fast, or awkward landing. Able to roll to the takeoff over soft or bumpy ground. Not just tires, but airplane tires.

Fuel tank covers, too, that prevents plash or spray, even though the container be battered, broken, or pierced. A perfect bandage of soft, live rubber that pro-

tects against condensation, as well as accident.

Rubber washers, rubber grommets, rubber hose—to resist wear, absorb vibration, defy corrosion, or withstand extreme temperatures.

Now, the weight, texture and character of rubber must differ according to its purpose. It takes men who know rubber to make airplane equipment that will give the longest and safest service.

Goodyear makes everything in rubber for the airplane.

Aeronautics Department

THE GOODYEAR TIRE & RUBBER COMPANY, INC., AKRON, OHIO



### THE de MONGE TYPE 7.5 MONOPLANE

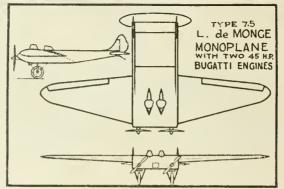
THE de Monge 7.5 two-motored low-powered monoplane is a unique example of the use of a light airplane in obtaining experimental flight data to be applied to a larger plane.

The firm of Buscayletde Monge of Paris are constructing a transatlantic airplane of the type illustrated here. The French pilot, Boussoutrot hopes to fly the larger machine from Paris to New York this summer.

Actual flying experiments with the 7.5 have provided information of a reliable character, simplifying the task of properly designing the transatlantic plane.

The type 7.5 embodies the principle of lifting fuselage; the ordinary body is replaced by a deep wing of short span in line with the upper camber of





which are placed two cantilever outer panels.

The center portion accommodates two pilots seated side-by-side in two separate cockpits, two motors with gasoline tanks and space for luggage and replacement parts.

The tail surfaces are supported by two faired flat booms, extending from the sides of the wing nacelle.

The motors are two water-cooled Bugatti "Brescia" type of about 45 h.p. each at 3200 r.p.m. The extremely high number of revolutions per minute explains the very small propeller diameter and therefore the close transversal coupling of the motors; in case of a failure of either engine, the offsetting moment is not as large as it would be with a motor of lower (Concluded on page 392)

#### THE UDET "KONDOR" MONOPLANE

THE German firm of Udet Flugzeugbau has produced the Udet Kondor, a 4-motored passenger monoplane with several new features. Four Siemens-Halske air-cooled engines, each delivering 100 h.p., are suspended below the wing, with long propeller shafts driving pusher propellers situated behind the trailing edge of the wing. Each engine has its independent supply of fuel which is fed by gravity from tanks built into the wing.

The wing is 72 ft. 3 in.; length over all, 50 ft. 10 in.; height, 12 ft. 1 in.; wing area, 752 square feet. The cabin is 12 ft. 8 in. long, 5 ft. 3 in. wide and 6 ft. 7 in.

high. At the nose of the body a navigator's cockpit is located. Behind him, at either side of the body in two separate cockpits, are the pilot and mechanician. Inside the cabin are armchairs for seating eight people; a baggage compartment and lavatory are arranged at the rear of the cabin. Alongside of each seat windows of triplex glass are provided.

The framework of the body is duralumin and the covering is with sheet duralumin. The wings are built up of wood and covered with plywood.

The German air transport combine, the "Lufthansa," is successfully employing ships of this type.



The four-motored Udet UII Kondor all-metal eight-passenger monoplane.



## Blazing Trail-

SEVENTEEN YEARS ago the airplane was a toy and a circus day marvel. Today, it is an accepted tool of commerce, of the Mail Service and of passenger transportation. All through these seventeen years of thrilling progress the men of The Glenn L. Martin Co. have

blazed the trail, leading the way to new standards of dependability and safety, contributing unceasingly to the mastery of the air. The purchaser of a Glenn L. Martin airplane is safeguarded by these seventeen years of insistence upon safety and sustained leadership.



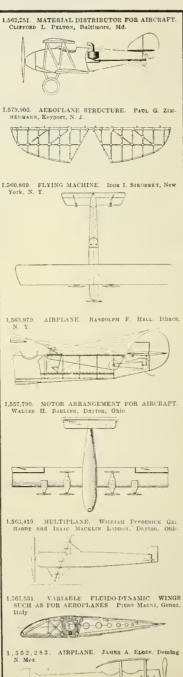
## A GROUP OF NEW AIRCRAFT PATENTS

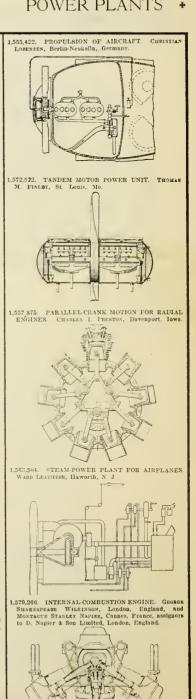
LANDING GEARS

**AIRPLANES** 

POWER PLANTS

1,546,555. LANDING CARRIAGE FOR AEROPLANES, WATERPLANES, AND OTHER FLYING MACHINES NICOLAS EMILIES METILLIS, Paris, France, assignor to Schodler & Ch., Paris, France. 1.554,221. RETRACTABLE LANDING GEAR FLAVIUS E. LOUDY, Akron. Obio 1,559,912. LANDING CHASSIS FOR AIRCRAFT. Acolf Rohebach, Berlin-Charlottenburg, Germany 557,242. LANDING CHASSIS FOR AIRPLANES Vigginius E. Clark, Dayton, Ohio. SHOCK ABSORBER FOR VEHICLES. 1,563,384 RETRACTABLE LANDING GEAR GROVER C. LOENING, New York, N. Y





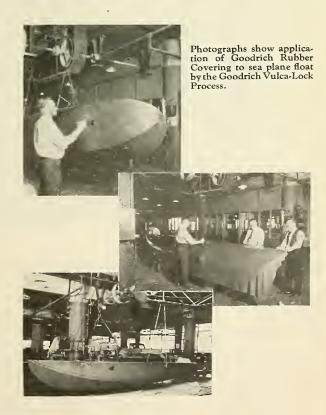
## -for the greater efficiency of aerial transportation

## Goodrich Vulca-lock Process

which fixes rubber permanently to wood or metal. Now applied to rubber coverings for pontoons, sea planes, floats and boats.

- 1 an absolutely watertight job under all conditions, either in water or dry dock.
- 2 being of flexible nature it permits the hull to with stand severe strains, such as landing in a heavy sea or in taking off in bad weather from choppy water.
- prevents water logging in wooden hulls—a feature which cuts down more weight than that of the rubber cover.
- 4 prevents barnacle growths on wood hulls and corrosion of metal hulls.
- 5 the rubber covering offers less friction in water, benefiting flier in take-offs.
- 6 simplifies construction, overcoming necessity of making the wooden members of a pontoon or float water-tight.

A recent achievement of Goodrich engineers, who are constantly striving for increased efficiency, safety and economy in all phases of navigation of the air.



Write for further information it will pay you to investigate

THE B. F. GOODRICH RUBBER COMPANY

Established 1870

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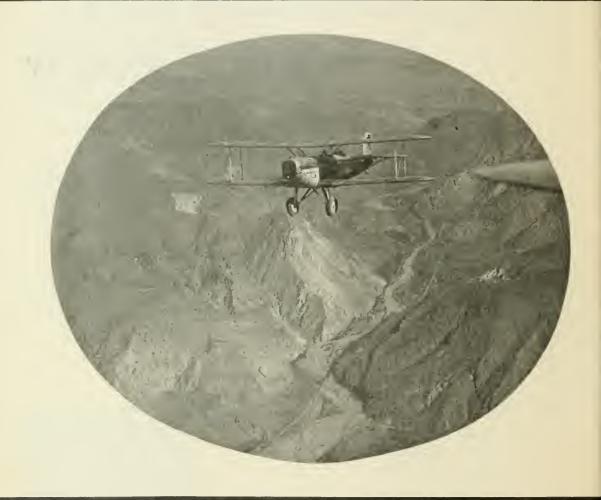
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Akron, Ohio



## "The Mail Plane



THESE views show the type of country over which Douglas type air mail planes are carrying mail for the Western Air Express, Inc., from Los Angeles to Salt Lake City.

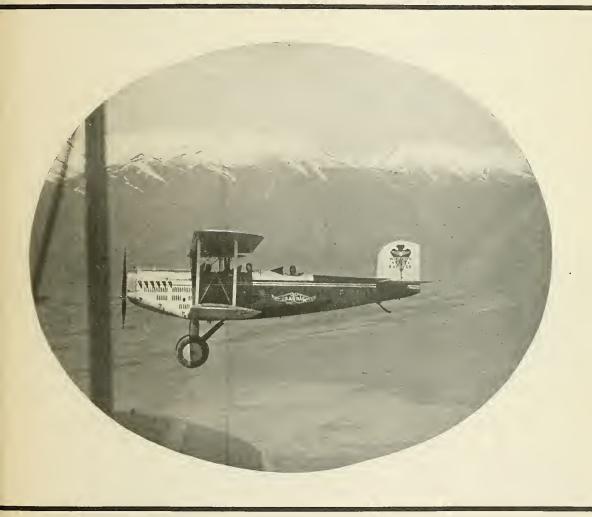
The Post Office Department has ordered 50 Douglas type M-2 mail planes, which is conclusive proof that it is the "Mail Plane of the Nation."



## THE DOUGLAS COMPANY

## of the Nation"





WITH a 400 h.p. Liberty 12 engine, the Douglas type M-2 mail plane gives the following performances:

High speed, 145 m.p.h.; cruising speed, 110 m.p.h.; stalling speed, 58 m.p.h.; landing speed, 55 m.p.h.; gas consumption at 110 m.p.h., 20 gallons per hour; service ceiling, 17,000 feet; rate of climb at ground, 1100 feet per minute.

## SANTA MONICA, CALIFORNIA



mail plane recently established a world record run from Chicago to

## GROWTH of the DOUGLAS COMPANY

URING the past three years the Douglas Company of Santa Monica, California, has experienced a remarkable

BvFrank E. Samuels New York, a distance of 726 miles

in 4 hours and 35 minutes, or at an average speed of 158.04 miles per hour. The scheduled time for covering this route is 7 hours and 30 minutes

growth, both in airplane production and personnel. In the year 1923 only 138 men were employed and 28 airplanes were constructed. At the present time 500 men are employed.

The World Cruise airplanes were built in 1924 and six Douglas seaplanes of the same general type were furnished the Air Service and delivered to the Philippines for coastal service.

In 1925 the Douglas Company was given the contract for furnishing the Air Service with 75 observation airplanes similar to the Douglas O-2 which had been awarded first place in the army observation airplane competition. This contract in addition to the work then under construction necessitated increasing the personnel to 375 people. Nine eight-passenger army transport airplanes and one air mail plane type M-1 were delivered during the year. This M-1 air

Engineering and development work have progressed on an all-metal air-cooled twin-engine bombing airplane for the United States Navy: this plane will have incorporated in it many new engineering features developed and tested by the Douglas Company.

The engineering department and factory are devoting their efforts towards maintaining contract delivery schedules on the recent Air Service orders for thirtyseven army observation airplanes model O2-c and O2-d. seven army transport airplanes model C-1-A, fifty air mail planes for the United States Post Office Department, one army attack airplane model XO-10, two torpedo planes for the Peruvian Government, as well as

(Continued on page 392)



Views showing some of the employees and departments of the Douglas Company at Santa Monica, California. Sheet metal, wing covering, engineering, wing construction and final assembly departments.

## STANDARD STEEL

ADJUSTABLE PITCH ALL METAL

## PROPELLERS

are now in commercial service



Douglas Mail Planes equipped with STANDARD STEEL PROPELLERS and some of the Field Staff and Pilots of Western Air Express, Inc., which operates the 660-mile contract Air Mail Route between Los Angeles and Salt Lake City. Seven Douglas Mail Planes, STANDARD STEEL PROPELLER equipped, provide the initial flight units of this line. They have a high speed of 145 m.p.h., and a cruising speed, (with pay load of 1000 lbs.) of 110 m.p.h.

STANDARD STEEL PROPELLER COMPANY

PITTSBURGH, PENNA.

Contractors to U. S. Army, Navy and Air Mail

## IN THE NEW DOUGLAS

## Nothing takes the place of

E IGHT years' study of actual operation of air mail planes has led to the discovery of hundreds of important facts relating to the constructional requirements of aircraft for day-in-and-day-out use.





THE accompanying illustration shows how the leather buffer is fitted to every Douglas air mail ship for the personal protection of the pilot in the event of an abrupt emergency landing. This accessory, although used very rarely, must be ready to soften a shock at any moment. To be certain of absolute readiness it is made of

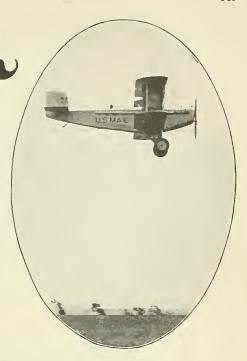
> REAL LEATHER



## MAIL PLANES

### Leather ?

THE Douglas mail plane now adopted by the Post Office Department represents a sum total of the refinements resulting from an exhaustive study of what is needed and how to supply the need. It is a high recommendation, therefore, that leather is used generously on this most up-to-date ship.





LEATHER is used generously throughout the construction and operation of aircraft. It is used where the wear is most persistent in the ships themselves. It is used for cushions, clothing, and personal accessories where a maximum of comfort and wearing quality is required.

## Nothing takes the place of LEATHER

AMERICAN LEATHER PRODUCERS, INC.

One Madison Avenue, New York, N. Y.

## Douglas Standardized on HASKELITE

## Five Years Ago



Douglas Wing Webs Under Construction Using Haskelite

THE use of HASKELITE on the new Douglas postal planes is in line with the established policy of this well known aircraft builder.

In a letter dated April 14, 1924, they say "in the construction of the four world cruisers and spare parts for same HASKELITE Grade A PLYWOOD was used throughout. We have used nothing but HASKELITE during the past three years and have been very well pleased with your products and the service rendered."

The postal planes with which this company has just taken a big air mail contract use HASKELITE for leading edge of wings, wing ribs, tail surfaces, rib gussets, fuselage floors, instrument board, and cock pit reinforcement.

Aircraft builders throughout the country specify HASKELITE to the extent of more than 85 per cent of all plywood used in the industry. The U. S. Navy has placed its fifth annual contract for HASKELITE the only material which meets the Navy's grade A specifications for water proof plywood.

A list of the more important users of HASKELITE and a blue print booklet showing its application to aeroplane construction will be sent to anyone interested.

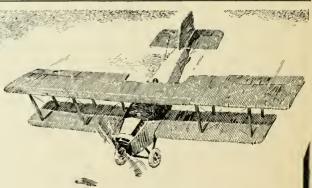
#### HASKELITE MANUFACTURING CORP., 133 W. Washington Street, Chicago, Illinois

### Plunging Earthward!

R USHING downward from dizzy heights, thousands of feet above the earth, what must a pilot think as he starts his plunge toward a landing field? Experience has taught him how to manipulate his controls to make an easy landing, but even so, the careful pilot always feels better—and safer—when he knows that he can depend upon the wheels under his craft. For even with the most careful landing, there's quite an impact when the wheels hit the ground, and if there is the least degree of instability and a tendency to crush, there is considerable danger of toppling over in a crash.

Our engineers carefully studied these points and then, in co-operation with the engineers at McCook and other flying fields, designed a type of wheel that would successfully withstand the shocks of landing.

As a result, Dayton Wire Wheels (streamlined to reduce wind resistance) will be found on nearly all Government and on most privately owned planes in the United States. Need more be said?



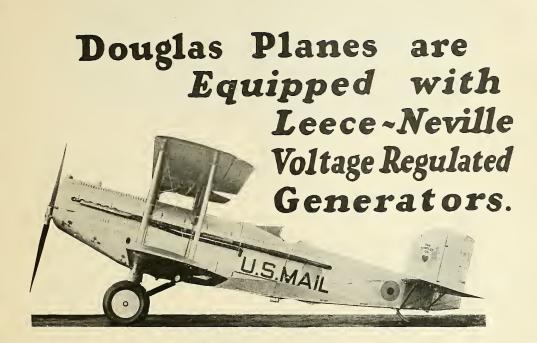
Information on Dayton Airplane Wheels gladly sent on request.

The Dayton Wire Wheel Co. Dayton, Ohio

Makers of Wheels

"For the Man Who Drives or the Man Who Flies"





BECAUSE of the exacting demands placed on the electrical equipment of airplanes, Leece-Neville voltage regulated generators are found on an annually increasing number of ships.

Many Douglas planes—all army air service planes—all U. S. mail planes used in night flying—and many others are so equipped.

Leece-Neville voltage regulated generators are developed to a high degree of efficiency. The regulation holds the voltage to very close limitations, in fact, close enough for delicate radio apparatus. It prolongs battery life, improves engine performance and assures ample current for electrical purposes.

To be completely equipped, an airplane must carry a Leece-Neville voltage regulated generator as its source of electrical current.

LEECE-NEVILLE CO.

5363 Hamilton Ave., Cleveland, O.

Say you saw it in AERO DIGEST



The Elgin Chronometric Tachometer, Van Sicklen Model is specified on Douglas Air Mail Planes

#### ELGIN NATIONAL WATCH COMPANY

Tachometer Division— Gordon C. Gillies, AS. A.E. 86 E. Randolph Street, Chicago, Illinois



The most complete stock

#### AIRCRAFT STEELS

to Government specifications in America

Alloys and Simples
All standard numbers in stock

BARS

Hot and cold rolled

**STRIPS** 

THE DICKERSON STEEL COMPANY DAYTON, OHIO

We supply aircraft steels for use in the new

Douglas Air Mail Planes



Wing covering department at the Douglas Plant

The wings of the Douglas Mail Plane are covered with Style No. 170

#### **FLIGHTEX FABRIC**

#### GRADE A COTTON CLOTH

GUARANTEED to meet specifications of the

ARMY AND NAVY AIR SERVICES

E. S. TWINING & CO. 56 WORTH STREET, NEW YORK

The advertisers on pages 344 to 353 inclusive are suppliers of material and parts used in the manufacture of

#### Douglas Air Mail Planes

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## FLEXO

#### COPPER CORE RADIATORS

flew around the world on the

#### DOUGLAS WORLD CRUISERS

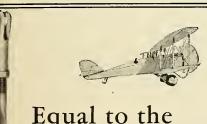
(making history)

We are now manufacturing all the radiators for the DOUGLAS AIR MAIL PLANES.

FLEXO radiators have proven their merits on the Western Air Express planes made by the DOUGLAS COMPANY.

#### FLEXO MANUFACTURING COMPANY

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## Equal to the severest demands

EXACTING tests have proved that Hartshorn Streamline Wire Tie Rods are in every way equal to the severe demands put upon them. And the fact that these rods present much less surface to the wind than cable is an advantage too great to be ignored. Made according to U. S. Army and Navy specifications. Write for Circular A-1 describing these wires and end-fittings.

Harlings.

Streamline Tie Rods

STEWART HARTSHORN CO., 250 Fifth Ave., New York



## WESTERN NEWS

#### CALIFORNIA DEVELOP-MENT ASSN. MEETS

N April 30 the California Development Association convened at the Alexander Hotel, Los Angeles, for a two-day meeting of the allied interests of the aeronautical industry. The meeting, which was the first of its kind in the United States, was held in cooperation with the Chambers of Commerce of Los Angeles. San Francisco and a number of surrounding cities.

Representatives of aircraft manufacturers, the Post Office Department. Air Mail lines, transportation division of the Department of Commerce, the Army and Navy, the N. A. A., the different California leagues, aero clubs and associations, as well as a number of the leading aviators and owners of commercial airports, made up a gathering of over two hundred enthusiasts when the meeting was called to order by R. E. Fisher, chairman.

Interesting and instructive talks were given by N. S. Gregg, of the Department of Commerce; Harry G. Smith, superintendent of Repair Depot and Warehouse, U. S. Air Mail Service, Maywood, Illinois; Major C. C. Moseley, general superintendent of Western Air Express; Dr. Ford A. Carpenter, manager of Department of Meteorology and Aeronautics, Los Angeles Chamber of Commerce; B. W. Burroughs, Ford Motor Co.; Dr. T. C. Young, president of Western Aero League; Captain Lowell H. Smith, commander of the Round the World Flight; Edward S. Jordan, president of the Jordan Motor Car Co.; Lieut, Colonel Frank P. Lalim, commander of 9th Corps Area; Norman H. Sloan, manager of the California Development Association; Earl Ovington and William Fox.

The next day the delegates inspected the Air Mail Field and over thirty of the latest Army, Navy and commercial planes there.

#### DOUGLAS TO SUPPLY 40 AIR MAIL PLANES

POSTMASTER GENERAL NEW awarded to the Douglas Company of Santa Monica, Cal. the contract for furnishing 40 airplanes for use in the government-operated transcontinental air mail service between New York and San Francisco. The Department will pay \$11,900 for each plane. Under the terms of the contract delivery shall begin within 60 days from the date of its acceptance and the 40 planes must be turned over to the Department within 160 days from the date of the contract. When these 40 planes are placed in service, the Department will be fully equipped with sufficient planes to better maintain its schedules over the transcontinental route. They will supplement the 75 planes now in serviceable condition and which are being employed in maintaining the government's air

Each Douglas plane will be equipped to carry a pilot and parachute, weighing 190 pounds, 130 gallons of gasoline weighing 780 pounds, 12 gallons of oil weighing 90 pounds and a mail load of 800 pounds. With the standard air mail night flying equipment each plane must maintain a maximum speed, level flight at sea level of 135 miles an hour and a landing speed of 55 miles an hour. A cruising speed of 115 miles an hour must be maintained and the rate of climb at sea level will be 1000 feet per minute.



Roger Airport Photo.

An air view of two 1,000,000-gallon oil tanks ablaze at Brea, California.

#### WHERE THE STARS FLY

E VERY Sunday is Movie Day at the airport of the Aero Corporation of California, and the field is rapidly becoming known as "The Field Where the Stars Fly" around the studios of Hollywood. On each Sunday a well-known star is guest-of-honor at the field; and for the day becomes part of the company and enters into the business of meeting the field's visitors and helping passengers to prepare for their rides. Among the stars who have been guests-of-honor are Dorothy Revier, Virginia Vance, Natalie Kingston, and Gertrude Short.

According to Lieut. Jack Frye and Monte Edwards of the Aero Corporation all the movie stars will soon be up in the air—where all good stars belong! Not only are they interested in joy hops but many of them are taking up aviation seriously and learning to fly.

#### A RECORD PORTLAND-LOS ANGELES FLIGHT

EIGHT hours and fifty minutes after he hopped off from Portland, Oregon, Pilot Lee Shoenhair of the Pacific Air Transport Company landed at Ryan Field, Los Angeles. Shoenhair left Portland at 7 o'clock in the morning and landed in Los Angeles at 3:50 p. m., with 1050 miles behind him.

It was the first Portland-Los Angeles nonstop flight. The longest previous flight was from Portland to San Francisco.

The pilot took his plane over the proposed Portland-Los Angeles air mail route, to be opened shortly by the Pacific Air Transport, to test equipment. His ship, a Ryan M-1, equipped with a Wright Whirlwind J-4 motor functioned perfectly. The gasoline consumption averaged twelve gallons an hour, and he had enough gas left when he landed to have taken him to San Diego.

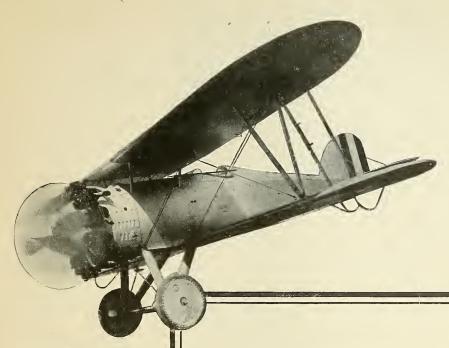
#### OIL FIRE AT BREA

THE accompanying air view of the \$20,-000,000 oil fire at Brea, California was taken by A. C. Gates, air photographer of Rogers Airport, Los Angeles, from a plane piloted by Eddie Bellande.

The photograph shows two of the 1,000,-000-gallon capacity reserve tanks as they looked from an altitude of 1,000 feet, and was taken just before the third tank, shown in the lower left hand corner of the picture, caught fire.

The white fence between the burning tank and the tank in lower corner was hurriedly erected to protect the fire fighters from the intense heat while they were digging trenches to catch the burning oil in order to keep it from igniting the tank next to it.

The orchards at the right of the photograph were entirely ruined.



The Pratt & Whitney "Wasp" mounted in the Wright "Apache" single-place plane exceeded the high speed of the standard pursuit ships with water cooled engines and surpassed their climb in ten minutes by more than 60 percent.



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The mission of leadership is to set new standards and blaze new trails.

Basic design improvements in air cooled radial type engines resulting in extremely low weight per horse-power and high crankshaft speeds have established a new and much better performance in high speed fighting ships.

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PRATT & WHITNEY AIRCRAFT CO.
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Rogers Airport, Los Angeles, California, where no stunting is allowed.

#### ROGERS AIRPORT

R OGERS AIRPORT, at 126th Street and Western Avenue, Los Angeles, is building a reputation as a field of careful and conservative flyers. No stunt flying is allowed. Their passenger pilots have strict orders not to stunt under any consideration and their teachers do not include stunting in their instruction.

They have operated for six years without an accident. Eighty-two students are in training there this year, and 27,625 passengers were carried in 1925. The personnel of the field consists of: James Webster, manager: Eddie Bellande, instructor: "Doc" Whitney, chief instructor: "Sandy" Sande, pilot; A. C. Yates, aerial photographer; Fred Matthews, chief mechanic; two assistant mechanics, Fore and Pitley; and Chubb, the relief pilot.

#### SAND POINT AIRDROME

By LIEUT, L. GOLDSMITH

W ITH the transfer of Sand Point Airdrome, Seattle, Washington, from the Army Reserves to the Navy, an active program of construction has been initiated. The Navy has just completed a temporary three-plane hangar with workshop and garage for official cars. The equipment consists of two Boeing NB1 training planes and two UO Voughts. Lieut, J. H. Campman, commanding officer, intends to ferry a DH4B up from Rockwell field within the next month and in addition to

this a British Blackburn "Swift" torpedo plane will be shipped in to be used in giving instruction in rigging to the Naval Reserve students.

Much credit is due the Army forces under the command, first of Major H. C. K. Muhlenberg and later of Lieut, T. I. Koenig, for the interest they have awakened as pioneers in Northwest aviation. The field. about 10 miles northeast of the central part of Seattle, came into practical existence in 1920. Three Curtiss training planes and a discarded Army airplane hangar were allotted to the Seattle reserve flyers. The ground was leased by King county and a narrow strip cleared for landings. Interest was fostered by Lieut. Koenig, the present commandant, and from 1924 to the present date the Army Reserves have gradually become a unified group.

Recently the Seattle Air Force was organized. The purpose of the organization is the promotion of aeronautics in the northwest and it is open to all reserve officers of the Air Service. The following officers were elected: Lieut. D. G. Graham, president, Lieut. Paul Coles, vice-president and E. J. McClanaham, secretary-treasurer.

Moncy has been raised for a clubhouse at the field and a house, now available, will be remodeled for clubrooms and for the accommodation of visiting pilots.

The Army Reserves, consisting of about twenty active flyers with a reserve enlisted personnel of fifteen men, have monthly meetings at which lectures are given on air service topics. During the week, the flyers go out to the field at times convenient to them and on week-ends formation flying and other air work is done in teams.

The field is heavily sodded and the drainage, installed by the Army, makes year-around flying possible. During the last two months the ancient hangar bas been reconstructed and the Army Reserves now have 2 DHs and 5 JNs at their disposal.

## PRESCOTT AIR MEET

PRESCOTT, Arizona will dedicate its new landing field on July 4th, during the Frontier Days celebration and rodeo which is held annually at Prescott. The entire day will be devoted to an aero show, flying circus and model airplane contest.

A cash purse of \$500 and silver cup are to be given for an On-to-Prescott race for civilian pilots and commercial planes.

Pilots flying to Prescott will have good country to fly over. The Tristate airway from Los Angeles and Kansas City is located north of Prescott, and the U. S. Army airway from San Antonio to San Diego is located south of Prescott. Landing fields are located all along these airways and emergency landings can be made anywhere on the route.

R. W. Hausler is putting on a stunt-flying contest for civilian flyers, the winner of which will receive a cash prize.

Further information can be obtained by communicating with the aviation committee Chamber of Commerce, Prescott, Arizona, which is composed of John A. Robinson, manager, R. W. Hausler, Pickens Woodson and Robert Connell, Jr.

## CHEYENNE-PUEBLO AIR MAIL ROUTE OPENS

S ERVICE on the contract air mail route between Cheyenne, Wyo. and Pueblo, Colo. will commence operation on May 31. The Colorado Airways, Incorporated, is the contractor for this route.

This route will make connections at Cheyenne with the transcontinental, government-operated air mail route in both directions, affording a continuous air mail service between New York and the large cities in the East and Middle West, and Denver, Colorado Springs and Pueblo.

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# THE PERFORMANCE MADE THE DEMAND

Write for details

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Fred Hoyt and the Aero Digest Cup won by him in his C6 Travel Air plane in the High-Speed Commercial Race at the Brea Air Meet.

## HIGH SCHOOL AIR CLUB

By Otis O PAINTER

THE Aeronautical Association of Polytechnic High School, Los Angeles, is composed of students who are interested in the science of flying. The membership is limited to fifty as a large group becomes too unwieldy. The officers are elected by a majority vote of the members and serve during one school semester.

The purpose of the organization is to study all branches of physics connected with flying. Each member must serve on a committee which makes weekly reports to the entire group. The committee's subjects are:

physics of air (including vacuums), internal combustion engines, electric ignition, stresses and strength of materials, controls, radio and theoretical problems of comfort of passengers and of landing fields.

AERO DIGEST

When possible a speaker is engaged to address the association on aeronautics, and frequent trips are taken to airports and factories. A few of the boys are taking flying lessons

#### STUNTER A LIFE SAVER

UNDREDS of persons in the vicinity of Clover Field, Santa Monica and Venice recently witnessed the thrilling rescue of a civilian aviator and his passenger.

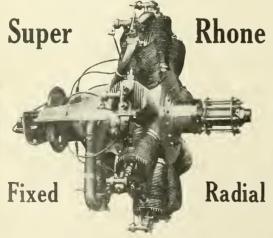
At an altitude of 2,000 feet, a plane, piloted by Jerry Phillips carrying a passenger, dropped a wheel from its landing gear. Seeing the plight of Phillips and his passenger. Art Goble and Al Johnson flew up to warn him of the situation. In the meantime Bob Lloyd and Frank Clark started out with a wheel, they passed it to Al, but, in the wind, it dropped out of his hands, They went back and got another with the same results. Finding that the wheel was too heavy for Al to handle they got another without a tire. This he was able to handle and hanging from the landing gear, he put it in place, inserted a cotter pin and enabled Phillips to make a safe landing.

## CLUB TO RUN AIR LINE

A N air line from Los Angeles to a landing field on a broad plateau close to their club house, nine miles below the Mexican border, is the plan of the governors of the Shoreacres Country Club in Lower California. Golfers are taking more and more to the air in order to reach their favorite links

The personnel of the list of organizers includes Claus Spreckles, Mayor James Rolf, Jr., of San Francisco, Walter Dupee, Martin J. Healy, Charles O. Canfield, William A. Lang, Maurice De Mond, Rodney Webster, Ed. R. Maier, Lew Cody, Secretary of State Frank C. Jordon, and Dr. J. J. Hal-

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120 HORSEPOWER at 1400 REVOLUTIONS

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RYAN AIRLINES HAVE NEVER
PRACTICED NOR ENCOURAGED
STUNT FLYING, YET THERE
IS SATISFACTION IN BUILDING
A PLANE THAT WILL STAND
THE STRAINS IMPOSED BY
THE TEST PILOT.

T. C. RYAN

Stunt



it!

# and be convinced the RYAN M-1 has the stuff!

STEP into a parachute and take the RYAN M-1 up to 10,000 feet, it will only take a few minutes, then try and turn the ship inside out!

Loop it, barrel roll it, dive it a thousand feet and pull back quickly on the stick, try to whip-stall it, try to spin it, wind it up in a tight spiral, full throttle, kick top rudder, give it everything, then float it down and look it over.

A biplane would probably need re-rigging. But the RYAN M-1 will be just as tight as the day it left the factory. Your little test ride will not even be a good workout.

You know that a monoplane can be built lighter, faster, and more efficient per horsepower than a similar biplane. The monoplane is aerodynamically correct. Perhaps you did not know that it could be built stronger and safer than any biplane now on the market. The RYAN M-1 is an example

Distinctly superior with a price range from \$2,890 to \$8,400.

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It is the duty of discriminating purchasers of aeroplanes to consider "SAFETY FIRST" as the requirement of prime importance.

## THE AIRCO AMPHIBIAN



EARLY
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AIRCO AMPHIBIANS are made in eight models, wood or metal; closed or open. Capacity: 1 pilot, 3 passengers, and 1 pilot, 5 passengers. Gliding angle 1 to 11. Easily operated retractable landing gear.

Luxurious equipment: self-starters, electric lights, heater, comfortable seating accommodations, windshield wipers, all instruments. Power: two—120 or 200 h.p. radial air-cooled engines.

PERFORMANCES	1 pilot and 3 passengers 120 h.p	5 passengers 200 h.p.
High speed on two motors	100 m.p.h	125 m.p.h.
High speed with one motor stopped	75 m.p.h	90 m.p.h.
Service ceiling	10,000 feet	12,000 feet
Climb from ground in one minute	боо feet	750 feet

The "AIRCO" AMPHIBIAN has been especially designed by Mr. Igor Sikorsky, after careful consideration of the results of over two years of intensive developments in actual flying tests of this type by Lieutenant George R. Pond, U.S.N.R., who is in charge of the supervision of the manufacture and tests of all "AIRCO" Amphibians.

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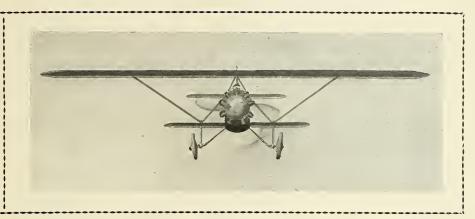
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Span 32 ft.
Overall length 18 ft.
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Normal useful load550 lbs.
(Pilot, 1 passenger, 3 hours' fuel.)
Power (air-cooled engine) 120 h. p.

Load per sq. ft. 8.5 lbs.
Load per h. p. 12.9 lbs.
Load factor 8.5 lbs.
High speed 130 m. p. h.
Landing speed below 40 m. p. h.
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## NEWS OF THE N.A.A.

### SCHENECTADY

CAPTAIN RENÉ FONCK, French Ace of Aces, was the guest of honor and principal speaker at the initial dinner of the Schenectady Chapter held at the Van Curler Hotel on May 3.

Captain Fonck was accompanied from New York by Frank A. Tichenor, president of the New York Chapter; J. E. Horsfall, editor of Aero Digest, and L. A. Shoumatoff, secretary and treasurer of the Sikorsky Manufacturing Company.

Commenting on his proposed non-stop flight from New York to Paris over WGY Captain Fonck said: "With the Americanbuilt Sikorsky plane and the French motors, which are the last word in aeronautical achievement from the point of view of technical and scientific advancement, I feel confident that I will be able to reach Paris from New York." The address was broadcast on a short wave length to enable reception in France. The original talk was translated and repeated in English. Announcements were also made in both French and English.

The charter presentation was made by Mr. Tichenor on behalf of the National Association. He spoke briefly of the activities of the New York Chapter and of the aims of the Association. Mayor Blessing, accepting the charter for the City of Schenectady, congratulated the local chapter on its efforts and expressed the wish that Schenectady might have an airport which would be a credit to the city. The other speakers were: S. M. Bishop, representing the Schenectady Chamber of Commerce; John J. Barry, speaking for the City Planning Commission; Postmaster E. G. Conde; and C. E. Eveleth, for the General Electric Company.

It was the unanimous opinion of the speakers that commercial air transportation was developing very rapidly, thereby warranting the attention, study, and support of the citizens of Schenectady.

H. C. Ritchie of the General Electric Com-

pany acted as toastmaster. Mr. Ritchie is the Aviation Lighting Specialist of the company, and has been active in all aviation work for a number of years.

After the charter members of the Schenectady Chapter were introduced, Captain Fonck was unanimously elected to honorary membership of the chapter. Later in the evening he received a small card which, in French, conferred this membership upon him. Attached to the card was the official button of the National Aeronautic Association.

The following officers were elected: president, Robert Weidaw; vice-president, W. M. Breingan; secretary, Robert L. Gibson; treasurer, J. C. Sloan.

Robert Weidaw is the advertising manager of the Adirondack Power and Light Company, and secretary-treasurer of the Inter-Cities Airways Service. He was the first man to do night flying in Schenectady and has the distinction of delivering the first electric range by airplane.

W. M. Breingan is a British ace. He was a major in the British Army during the Great War and has seven enemy planes to his credit

R. L. Gibson is in the Publicity Department of the General Electric Company and has recently made a study of aviation for the company. J. C. Sloan is an Aviation Equipment Specialist of the General Electric Company.

The Board of Directors includes the four officers above and H. C. Ritchie, A. R. Stevenson, Jr., and W. E. Younglove. Mr. Stevenson was formerly chief of the Radio and Electrical Section of the U. S. Air Service in the A. E. F. and was also in charge of the Experimental Flying Field in the U. S. Air Service at Villa Coublay, Bois d'Arcy, and Choisy LeRoy, France. He is also a member of the Royal Aeronautical Society. Mr. Younglove is one of the officials of the American Locomotive Works, and President of the Schenectady Country Club.

### PARIS, FRANCE

A LUNCHEON was recently given by the Paris Chapter in honor of Major Yount, Air Attaché of the American Embassy in Paris.

Major Yount expressed the opinion that the United States will eventually see the wisdom of subsidizing aeronautics, probably indirectly through the creation of landing fields.

Clifford Harmon, president of the International League of Aviators, was also a speaker at the luncheon. Sidney B. Veit. president of the chapter, called attention to the friendship of France and America, saving: "It was France that invited the Wrights to Avour and gave the friendly encouragement which led to practical and lasting results. Since then France's part in the development of aeronautics has been a remarkable record of heroic achievement and inspiration that has won the admiration of all. It was Franco-American friendly competition that has established many of the records which show the possibilities of aeronautics."

At the conclusion of the luncheon the members and their guests were taken to Le Bourget and shown over the airport. Later they had a ride in the Farman Goliath planes of the Air Union. Among the guests in addition to the speakers were R. C. Wood, F. S. Lahn, Donald Harper, M. Hinton, M. Vedurand and C. G. Jerosch.

#### ST. JOSEPH

CARL WOLFLEY, vice-president of the National Aeronautic Association, together with Harry Block, governor of the association for the State of Missouri, have announced their intention of getting to work and making another world's record in the establishment of chapters in the territory adjacent to St. Joseph where the N.A.A. thrives.



The charter presentation dinner of the Schenectady Chapter of the N. A. A. where Capt. René Fonck was the guest of honor.





# How a Forty-Niner would have gasped at the sight of a Duco-Finished Plane!

GONE are the sour-dough, and the desert canary!—today prospectors dash to the newest gold rush, at Red Lake, Ontario, in a Wright-motored Curtiss "Lark"—completely finished with Duco!

Duco is one of the many du Pont products scientifically adapted to aircraft use. There is a du Pont product for every part of an airplane—wing dope, paint, varnish and Duco.

The Cartiss "Lark" is powered with a 200-H. P. Wright Whirlwind motor. The machine in use at Red Lake, Ontario, is owned by Patricia Airways & Exploration, Ltd., Toronto, Can.

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The advice of the du Pont Industrial Finishing Service is freely offered for help on your own particular needs. Write us about your finishing problems. Address: E. I. du Pont de Nemours & Co., Inc., Chemical Products Division, Parlin, N. J., Detroit, Mich., Chicago, Ill., San Francisco, Cal., Everett, Mass., or Flint Paint & Varnish Limited, Toronto, Canada.

OU PONT

# WITH the SERVICES

## ARMY PLANES FLY TO MAUNA LOA VOLCANO

By LIEUT, DONALD E. STACE

VALUABLE scientific information was obtained by a flight of three airplanes of the Army Air Service when they took photos from the air of various stages of the recent eruption of Manna Loa in Hawaii.

Manna Loa, on the Island of Hawaii, is the largest active volcano in the group. After a quiet period of seven years it broke forth in an eruption and lava flow early Saturday, April 10th. The activity quieted down after a few hours but broke forth again with increased vigor on Tuesday evening of the following week. As the slopes of Mauna Loa are practically inaccessible, Dr. T. A. Jaggar, the Volcanologist in charge of Kilauea Observatory, requested that army planes be sent to locate the source of the flow and take pictures of its progress.

The Commanding General of the Hawaiian Department authorized a flight of three airplanes to proceed to Hawaii to comply with Dr. Jaggar's request. The flight consisted of a DH4B-P-1 and a DH-4B from Luke Field and a Loening amphibian from Wheeler Field. (The latter plane participating as part of its service test as a photoobservation plane). The photo ship (DH4B-P-1) was piloted by Lieutenant Harold R. Rivers with Staff Sergeant Robert H. Benson as photographer, the DH-4B by Lieutenant James D. Givens with Lieutenant Glenn C. Salisbury, observer, and the COA-1 by Lieutenant Everett S. Davis with Technical Sergeant Dan H. Dorcy as radio operator and later with Lieutenant Rivers as photographer.

The flight proceeded from Luke Field to Uplou Point on the north end of Hawaii, serviced, and then continued to the landing field at South Cape, the other extremity of the Island. Enroute the flight observed the volcanic activity and took pictures of the flows, the most interesting being the approach of the lava to the village of Hoopuloa.

On Sunday morning the lava stream de-

stroyed the village of Hoopuloa and flowed into the sea. Pictures of the flow were taken at the time the first building caught fire and later of columns of steam from the boiling sea water. It was through the work and photos of this flight that the actual nath of the volcanic flow was determined. The lava flow had its origin not in a crater but in a large rift in the rocks at about 8 500 feet above sea level. The volcanic activity and craters were observed on the 7,500 foot level. It then proceeded down the mountain side for some distance until a point was reached where about a quarter of the stream disappeared under ground only to reappear later headed for the Kau side of the Island. This flow was known as the Kau flow and stopped before reaching the sea. The main branch of the moving lava known as the Honomalino flow proceeded down the mountain until it crossed the concrete government road then made a turn of about ninety degrees and headed straight for Hoopuloa and the sea.

The flight operated from South Cape Field under very adverse conditions Food was hard to obtain, water and shelter were scarce and telephone communication was miles away. Fortunately gasoline was obtained from the Standard Oil dealer at the nearest town, 15 miles distant. The dealer gave his entire supply to the aircraft, All the photographic work was completed on Sunday, and Monday afternoon the flight returned to Luke Field.

### WANT WIVES TO FLY

BELIEVING woman's place is in the air as well as in the home, twelve officers of the Air Service Reserve of the Eighth Corps Area have asked Major General Ernest Hinds to allow their wives to fly.

The officers recommended that all Reserve Officers of the Air Service he placed on active duty without pay and allowances made at certain intervals to permit their wives to make airplane flights with competent pilots.



## MILLER FIELD MEET

THE 27th Division Air Service, New York National Guard, will hold their annual air meet at Miller Field, near New Dorn Staten Island on Lune 26

Army, Navy, Marine Corps, National Guard and civilian aircraft units are cooperating to make this meet a success. Twentyseven events are scheduled for the day's program including an On-to-Miller Field race. a spectacular sham battle, combat and formation flying demonstrations, parachute jumping, airplane and seaplane races, skywriting and stunt flying.

In arranging for the meet Major George A. Vaughn, Jr, has been assisted by Captains George Usher, G. Wheeler, L. C. Brower and Von Lockun; First Lieutenants E. J. T. Weatherdon, L. F. Long and W. G. Rector: Second Lieutenants I. B. Morris and A. W. Snowden and the entire enlisted personnel of the 27th Division Air Service, New York National Guard.

#### MACKAY ARMY TROPHY

THE 1925 Mackay Army Trophy established in 1912 by Clarence Mackay has been awarded to Lieuts. Cyrus Bettis and James H. Doolittle as a team in recognition of the excellent performances of Lieutenant Bettis, winner of the Pulitzer Race, and Lieutenant Doolittle, winner of the Schneider Trophy Race, which contests were the outstanding speed events of the year.

This trophy is competed for annually by officers of the Army, under rules made and promulgated by the War Department of the United States Government. Following is a chronology of the awards:

1912—Lieut, Henry H, Arnold.
1913—Second Lieut, Jos, E. Carberry and Second Lieut, Fred Seydel, Observer, San Diego, Calif. December 29, recommaissance.
1914—Capt, Townsend F, Dodd and Lieut, S, W. Fitzgerald, San Diego, Calif., December 23.

1914—Capt. Townsendersance.
1915—Lieut. B. Q. Iones for American duration record. One-man flight of 8 hours, 53 minutes, San Diego, January 15. For world record for three-men (two passengers) of 7 hours 5 minutes, San Diego, January 15. For world record for three-men (two passengers) of 7 hours 5 minutes, San Diego, March 12.
1916—1917—No award due to war.
1918—Capt. Edw. V. Rickenhacker, for his official record in bringing down 26 enemy aircrait.
1919—Lieut. Belvin W. Maynard, Lieut. Alexander Pearson, Jr., Lieut. R. S. Northington, Capt. John O. Donaldson, Capt. Lowell H. Smith, Lieut. Col. Harold E. Hartney, Lieut. E. M. Manzelman, Lieut. R. G. Bagby, Lieut. D. B. Gish, Capt. F. Steinle, For their flights between the Atlantic and the Pacific and return.
1920—Capt. St. Clair Street, Commanding Officer of the Alaskan Flying Expedition, First Lieut. Clifford C. Natt. Second Lieut. Ross. Second Lieut. C. I. C. Edmand. Henriques. Sgt. Albert F. Vierra, Sgt. Jos. E. English. For their flight, and the condition of the Condition of

SC-1 torpedo planes and a Vought UO-1 (in the air) at Guantanamo Bay, Cuba.



Vought UO-1

U. S. NAVY
Standard
for Spotting
and
Observation

# The men who fly them will tell you—

"Voughts are easy to fly—almost fly themselves."

"They can be flown in and out of small places."

"They are comfortable even in roughest weather."

"They are real ships and a pleasure to fly."

"We fly them with absolute confidence always."

"A Vought will get you there and back again."



CHANCE VOUGHT CORPORATION

Long Island City, New York

## SENATE REPORTS

THE report made by the Senate Military Committee on H.R. 10827 under date of May 14 shows quite plainly the domination by the General Staff over the committees from both the Senate and House of Representatives

The House Military Committee refused to report out the real constructive bill and the Senate Committee eliminated the few remaining measures of value it contained.

There will never be an effective air force in the United States no matter how many hundreds of millions are spent on it until aviation is taken from the hands of the Army and Navy whose petty jealousies and red tape have unintentionally kept it in an intangible mess.

The establishment of a department of National Defense where aviation will be placed on an equal footing with the Army and Navy, as it is now in every other world power with the exception of the United States, will soon prove not only the economy but the effectiveness of aircraft as a means of defense.

### 400 NAVY PLANES TO FLY WITH FLEETS

M ORE than 400 navy planes of all types will be affoat next year when the aircraft carriers Saratoga and Lexington take their places as air flagships of the Battle Fleet in the Pacific and the Scouting Fleet in the Atlantic.

Each major unit of the United States fleet, including the Asiatic fleet and excepting only the European squadron and the special service squadron in southern waters, will have its own air flagship and two or more squadrons of planes of types specially suited to the mission of each force. A total of twenty-one squadrons of flying craft will be on duty with the surface ships.

The Saratoga will be completed about Dec. 1 and will be commanded by Captain Henry V. Butler, one of the group of captains taking special aviation courses at the Naval Air Station, Pensacola Fla., in preparation for their assignment in command of the carriers. The Saratoga will join the Battle Fleet in the Pacific, relieving the second line carrier Langley to serve as flagship of the aircraft squadrons.

The Lexington will be ready for her trial in April, 1927, and will be commanded by Captain Walter R. Gherardi, now at Pensacola. She will join the Scouting Fleet in the Atlantic, relieving the second line carrier Wright which goes to the Asiatic fleet as flagship of its air squadrons. The tender Jason will join the fleet base force in the Pacific. The Langley will become flagship of the new aviation group to be created as a part of the base force, with the tenders Jason and Aroostook as auxiliary ships.

Of the twenty-one aircraft squadrons afloat with the fleet, five will be assigned to each of the big carriers and will include fighting, torpedo, bombing, scouting and observation planes. Three squadrons of observation and bombing planes will be aboard

the battleships in the Pacific and two aboard battleships attached to the Scouting Fleet in the Atlantic. Destroyers of the Battle Fleet will carry among them a squadron of observation planes, while three more squadrons of scouting planes and a number of experimental types will be assigned to the fleet base force in the Pacific.

In the Atlantic, the light cruiser division will carry a squadron of observation planes to be launched from catapults in addition to the five squadrons of all types aboard the Lexington. In Asiatic waters two squadrons of bombing and torpedo planes will be based on the flagship Wright.



Underwood & Underwood.

Lieut. F. H. Conant; Asst. Secy. of the Navy Robinson; Secy. of the Navy Wilbur; and Lieut. T. P. Jeter, winner of the Curtiss Marine Trophy.

## JETER WINS CURTISS MARINE TROPHY

LIEUT. T. P. JETER, of the Navy Bureau of Aeronautics, won the annual seaplane race for the Curtiss Marine Trophy, on May 14, with an average speed of 130.94 m. p. h. His time over the 80-mile course was 33 minutes and 41 seconds.

Lieut. James O. Barner finished second with a speed of 129.98 miles an hour—less than 15 seconds behind the winner, his time being 33:55:6. Both Lieut. Jeter and Lieut. Barner piloted F6-C single-seater fighting ships.

Nine planes started in the race from the Naval Air Station, Anacostia, D. C., and all but one finished.

The planes were divided into four groups and the winner in each group was presented with a gold wrist watch. Winners of the other three groups were: Lieut. A. Curtain, piloting an F5-L flying boat. His speed was 74.3 miles and the time was 59:34:6.

Chief Boatswain W. C. Fitzpatrick piloted an HL-6 at 77.477 m.p.h.. His time was 56:55:2.

Lieut. Conant, piloting a UO-1 observation plane, made a speed of 104,115 m.p.h. His time was 42:21:4.

Lieut. C. T. Simard finished second to Lieut. Curtain in the first group, with a speed of 72.085 m.p.li, and time of 1 hour, 1 minute and 10.8 seconds.

Lieut. C. C. Champion, piloting a twin-

float seaplane of the SC-6 type, finished second to Lieut. Conant in the third group, with a speed of 97.229 m.p.h., and time of 45:21:2. Behind him came Lieut. Russell Pollard, whose speed was recorded at 92.81 m.p.h., and time at 47:29:8.

A flying and parachute jumping exhibition preceded the race. Alva F. Starr, from the Naval Air Station at Lakehurst, won the parachute jumping contest, landing within 79 feet of the marker. A. J. Drake was second, landing 224 feet from the mark, and E. J. Stegauf was third, landing 357 feet from the mark.

#### AIR WAR GAMES

THREE of the matches in the big machine gun and bombing airplane meet at Langley Field, Va., have been completed.

The pursuit pilots' match was won by Second Lieutenant L. M. Merrick of Panama with a score of 730 out of a possible 1,000 points. Second place was won by First Lieutenant L. H. Sanderson, Marine Corps, with a score of 706, and third place by First Lieutenant C. F. Schilt, also of the Marine Corps, with 564.

In the observation pilots' match Second Lieutenant E. E. Partridge of Kelly Field, Texas, won first place with a score of 646. Second Lieutenant H. S. Vandenberg of Kelly Field won second place with 638, and First Lieutenant R. N. Ott, Panama, won third place with 537.

In the observers' match Second Lieutenant S. C. King of Mitchel Field, L. I., won first place with a score of 197. Second place was won by Captain R. J. Archibald, Marine Corps, with 190, and third place by Second Lieutenant C. W. Cousland of Fort Sill, Okla., with 168.

The heavier-than-air bombing match was won by Lieutenants E. E. Harmon, pilot, and H. L. George, bomber, a team from the office of the Chief of Air Service, Washington, from a height of 8,000 ft., with a score of 1,472. Second place is held by Lieutenants W. T. Larsen, pilot, and C. E. Shankle, bomber, both from Panama, with a score of 1,334 and third place by Second Lieutenants A. Y. Smith, pilot, and D. M. Allison, Reserve Corps, bomber, from Langley Field, with a score of 1,284.

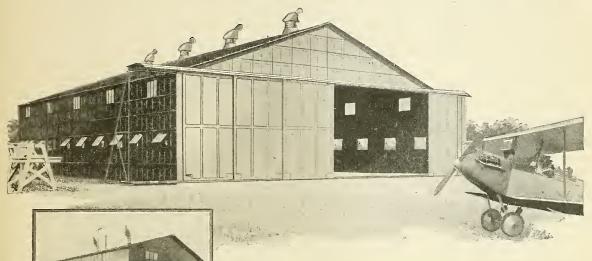
The lighter-than-air bombing contest followed these contests.

## NO PULITZER RACE THIS YEAR

THERE will be no Pulitzer Trophy Race this year. Both the Army and Navy have finally decided against entering planes in this annual speed classic and as the entrants have been confined to the military services this decision means no 1926 Pulitzer Race.

This leaves the Schneider Cup Race at Norfolk, Va., on October 24 as one of the year's big aerial Service events and the racing planes of both the Army and Navy Air Services are being groomed for this race.

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# WITH the INDUSTRY

## VAN ORMAN WINNER OF BALLOON RACE

W ARD T. VAN ORMAN is the winner of the National Elimination Balloon Race and the Litchfield Trophy for the third time in succession. With his aide, W. W. Morton, he piloted the Goodyear Tire & Rubher Co.'s entrant "Goodyear IV," landing 8 miles southeast of Petersburg, Virginia, after having gone 848 miles from Little Rock, the starting point.

The Scott Field Army balloon "S-23," piloted by Capt. Hawthorne C. Gray, with D. Johnston as aide, came in second place, having covered 635 miles, landing 7 miles north of Mount Holly, North Carolina.

"Akron N.A.A.," entered by the Akron Chapter of the National Aeronautic Association and piloted by J. A. Boettner with H. W. Maxson as aide, made the third hest distance—627 miles, landing 1.5 miles north of Kimball, W. Va., and 7 miles northeast of Welch, W. Va.

The other seven entrants came in as fol-

The Phillips Field, Md., Army entrant, "S-21," Lieut. James F. Powell and Lieut. James F. Early, pilot and aide, made 618 miles, landing 12 miles north of Hickory. North Carolina.

The Detroit Flying Club's entry, "Detroit," flown by Herbert V. Thaden and C. D. Williams (aide), covered 574 miles, landing 3 miles west of Gulnare, Kentucky.

The Langley Field, Va., Army Balloon, "S-20," piloted by Lieut. William A. Gray, with Lieut. Rowland Kieburtz as aide, made 570 miles, landing at Reedville, Kentucky.

The "Detroit Adcraft" entered by the Detroit Adcraft Club and piloted by Lieut. A. U. Rasmussen and Edward J. Hill (aide), made 566 miles, landing 3 miles west of Blaine, Kentucky.

The McCook Field Army entry, "S-19," flown hy Capt. Lawrence F. Stone, with Capt. G. R. Oatman as aide, covered 510 miles, coming down 1.5 miles east of Willow, Kentucky, and 7 miles southeast of Heidelherg, Kentucky.

Walter A. Ham and Robert P. Lehr, piloting "Goodyear Southern California," made 473 miles, landing 5 miles east of Broadhead, Kentucky.

The pilot halloon, "Skylark," entered by The Arkansas Gasette and piloted by W. C. Naylor and K. W. Warren (aide), made 410 miles, landing 4 miles north of Crawford, Tennessee

#### **NEW ENGLAND NEWS**

By DANIEL ROCHFORD

THE Boston Air Meet of 1926, if it takes place, as now seems likely, will occur in early September. Prize money has already heen pledged by the Boston Transcript, The Boston Airport Corporation, and a number of private aviation enthusiasts. The Transcript has offered a Boston Flying Trophy to be awarded annually to the Boston pilot having the most meritorious flying record of the year. The award will he hased on flying time, character of flying done, safety and efficiency record of pilot. The New England Air Service Reserve Officers Association appointed a committee of three to prepare a general plan for the meet. Captain Christopher W. Ford heads the group. Lieutenant Robert Lincoln O'Brien, Massachusetts inspector of aircraft, commercial and reserve flyer, and Lieutenant Daniel Rochford of the Municipal Air Board serve with him. Major C. H. Wooley is forming a National Guard committee. Lieutenant Reginald D. Thomas is forming a Naval Reserve Committee, W. Irving Bullard and Frank C. Arnault of the Colonial Air Transport, Daniel C. Sayre of the Boston Airport Corporation, Professor E. P. Warner of the N. A. A., Lieutenant George Lusk, president of the Air Service Reserve officers, and the members of the N. A. A., Massachusetts Aero Club, New England Aero Club, Boston Chamber of Commerce Aviation Committee and Muncipal Air Board, are involved in the general preparations. The meet will mark the anniversaries of the opening of the Boston Airport and the landing at Boston of the World Flyers.

The Lieutenant A. Vernon Macaulay Flying Trophy was awarded for the second time to Lieutenant Reginald D. Thomas, commander of the Naval Reserve Air Station at Squantum. His flying time since May 1, 1925, was 731 hours and 20 minutes. Lieutenant Frank C. Crowley, A. S. O. R. C., now on active duty at Selfridge Field, Michigan, placed second with 514 hours' flying time. This trophy was formerly called the Army and Navy Safe Flying Trophy. On the day of its first award, May 2, 1925, Lieutenant Macaulay was killed in a take-off to participate in aerial exercises in honor of the award and the cup was renamed for him

Standings of leading pilots other than the above, follow: Army reserve pilots—Lieutenant Crawford Hollidge, 144 hours; Captain Bartlett Beaman, 133 hours; Lieutenant R. L. O'Brien, 167 hours; Lieutenant George Lusk, 52 hours; Captain R. F. Raymond, 35 hours; Lieutenant H. R. Bazeley, 33 hours; Lieutenant Charles Clark, 27 hours. National Guard pilots—Lieutenant Rohert A. Nagle, 117 hours; Captain C. E. Hodge, 103 hours; Lieutenant Julian S. Dexter, 82 hours; Lieutenant Julian S. Dexter, 82 hours; Captain A. L. Edson, 92 hours. Naval pilots—Chief Aviation Pilot E. G. Frank, 228 hours; Lieutenant Commander Noel Davis, 161 hours.

Anthony Fokker spoke at the N. A. A. luncheon in Boston and at the Tech Aero Cluh banquet the past month. He said be couldn't fly to Boston since he had sold all his planes.

Fokker told his Boston audiences he was going to become an American citizen, his major business interests now being in this country. Before leaving Boston he called on Mrs. Richard Byrd, wife of the Pole conqueror, and gave her a small gold pin model of his three-motored plane that Commander Byrd used.

Captain C. E. Hodge, and Lieutenant Rohert A. Nagle of the Massachusetts 26th Division Air Service, National Guard, went to Langley Field for fifteen days of active duty on hombing during May.

The Coast Guard has taken to the air in New England. Bases are to be established at Gloucester and perhaps further up the coast. A UO Vonght has been flown from



W. T. Van Orman, winner of the National Elimination Balloon Race, Little Rock.

## Light your Airport

Transportation will always demand night-time as well as day-time operation. Therefore, for your airport to be fully equipped for commercial aviation. it must be correctly lighted for night flying.



Lighting Equipment for Airports and Airways

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For information address the G-E Aviation Lighting Specialist at Schenectady or at your local G-E Sales Office

## Third Annual Aviation Meet of the 27th Division, Air Service, N. Y. N. G.

MILLER FIELD Staten Island New York

Saturday, June 26th, from 11 a.m. to 7 p.m.

Announcements of events and winners by loud speaker on field.

Balloon-bursting exhibitions throughout course of meet.

## PROGRAM OF EVENTS:

- 1-On to Miller Field-(Open to all types of planes). (a) To organization sending greatest number of planes. First Prize-silver loving cup. (b) To field flying greatest number of airplane miles. First prize-silver loving cup.
- 2—Formation Flight (Open)—First heat—11 a. m. First and second prizes—silver cups.
- 3-Landing to a Mark (Open)-11:30 a. m. First prize-gold watch; second prize-silver cigarette case; third prize-set of military brushes.
- -Altitude race (Open)-12 M.-Prizes the same.
- 4—Attitude race (Open)—12 M.—Frizes the same.
   5—The Blue Ribbon Airplane (Open)—12:30 p. m. Mechanics sweep-stakes for best conditioned airplane. First prize—gold cuff links for each of winning ship's crew.
   6—Seaplane Race (Open)—1 p. m. Miller Field to Statue of Liberty and return. Prizes same as for event No. 3.
   7 Departure transition of the prizes same as above.
- 7-Parachute Jumping. First heat, 1:15 p. m. Prizes same as ahove. 8-Battle between airplanes and tanks (demonstration). Attacking tanks bombed by airplanes.
- 9-D. H. Speed Race (Open only to U. S. Army Regulation D. H. planes)-1:30 p. m. Start and finish over field. Prizes same as for event No. 3.
- 10—Stunt Flying (Open)—First heat 1:40 p. m. Judged as variety of stunts and skill in maneuvering. Prizes same as event No. 3. 11-Sky Writing (demonstration)-2 p. m.

- 12-Formation Flight, 2:15 p. m. Second heat.
- Aerial Combat (demonstration) 2:30 p. m. Two-seater attacked by two scout planes. Observer will jump with parachute from two-seater.
- 14-Stunt Flying-Second heat, 2.45 p. m.
- 15—National Guard Speed Race (limited to National Guard Squadron only)—3 p. m. Prizes same as event No. 3,
- 16-Parachute Jumping-Second heat, 3:30 p. m.
- 17—Stunt Flying—Third beat, 3:45 p. m.
  18—Formation Flight—Third heat, 4 p. m.
- 19-Smoke Screen laying (demonstration), 4 p. m.
- 20-Parachute Jump-Third heat, 4:15 p. m.
- 21—Open Speed Race—4:30 p. m. Start and finish over field. Prizes same as event No. 3.
- 22-Stunt Flying-Fourth heat, 5 p. m.
  - 23—Speed Race—5 p. m. Open to all planes rated under 150 miles per hour. Start and finish over field.
     24—Parachute Jump—5:15 p. m. Fourth heat.
- 25—Relay Race, mixed types—5:30 p. m. Three planes to a team. First prize, three gold watches.
- 26-Stunt Flying-5:30 p. m. Fifth heat.
- 27-Parachute Jumping-6 p. m.



Waco used by Eugene Stevens of the Southern Dusting Co., Tallulah, Louisiana.

Squantum the past month. Other planes are expected later.

The Arlington (Mass.) Gas Light Company has painted the town name on the roof of its largest gas tank. Salem and other New England towns are equipped with similar aerial guides.

In Maine flying has taken a livelier look up. In Augusta the state is to set aside part of its muster ground at Camp Keves and improve it for a landing field. In Bangor a commercial concern has leased seventynine acres near the place where General Mitchell landed his twenty-three Martin Bombers in 1921. They are raising money through sale of stock. The past two months they have run a ground school. Juan T. Trippe, general manager of Colonial Air Transport, Inc., went down to Portland, Bangor and Bar Harbor last month to lay preliminary plans looking to an ultimate air tie-in for Mainc with the Boston-New York air mail and express lines.

The Massachusetts Institute of Technology is sending its usual quota of candidates to the advanced Naval Reserve flying course at Hampton Roads next week. Another class of beginners is underway at Squantum already.

The Tech Aero Club has elected the following officers for 1926-27: president, B. A. Gillies; vice-president, Ben A. Kelsey; secretary, Ralph E. Manchester; treasurer, Erik Hofman. The members of the managing board are: Franklin T. Kurt (president last year), Everard M. Lester, and James C. Reddig. They come from all sections of the country and are all pilots.

Twenty-eight members of the club bought "hops" from the Boston Airport Corporation at a group rate the past month. Four other hops were drawn for by men attending the annual banquet and paid for by the club treasury. One hundred and thirty men attended the banquet.

Boston flying by service aircraft the past four weeks has averaged about 65 hours weekly. The only commercial activity has been that of Travel Air planes. Cy Caldwell, resident Travel Air pilot, flew back a Wright Whirlwind-powered Travel Air for Frederick Lothrop Ames of Northeaston, Mass. Ames has built a private hangar on his parental estate near Brockton. His landing field is a little longer than the Boston Air-

port ground and a fairly easy field for small planes.

The Boston Airport Corporation has leased the Muller Field at Revere, Mass., and has erected hangars and service facilities. Passenger hops are featured and planes are constantly on the line there. The field is on the main highway.

## WACO DEMAND GROWS

THE accompanying photograph shows the Waco plane used by Eugene Stevens of the Southern Dusting Company of Tallulah, La. His company is using a fleet of Wacos in its crop dusting operations. All of these machines are equipped with 90 h.p. OX5 motors.

A repeat shipment of Wacos is being made to J. S. Rodenbaugh of Fairbanks, Alaska, who states that economical air transport fills an urgent need in his territory. His Waco flew six hundred miles from Fairbanks to Nome, making one stop, in six hours and twenty minutes.

A price reduction on the improved Waco "Nine" has just been announced by the Advance Aircraft Company of Troy, Ohio. A special "cross-country" propeller and dual control are now optional equipment at slight additional cost. Right or left hand throttle are without extra charge.

Although production of the Waco has been repeatedly increased and is now in excess of a plane a day, the Advance Aircraft Company finds itself barely able to meet the demand for immediate delivery. Orders on the books are many times greater than at this time last year and even the new production facilities will be taxed to the limit.

## NEW AIRPORT AT AMES

A MES, IOWA, is to have a fine new airport as the result of activities of Joe Gerbracht, of the Ames Theater Company, and his brother Wilfred, who will manage the field.

They have leased 125 acres, on the Lincoln and Jefferson highways and will use 75 acres for runways and reserve 50 acres for automobile parking. A 4-passenger Travel Air is being built for them, to be delivered June 10.

The field will be marked with regulation

white circle and arrow pointing north. The equipment includes hangar, wind sock, ground wind indicator, with A M E S painted, 15 by 50 feet, on top of the hangar; aviation gas and oil filling station. It will be equipped for passenger carrying, student training, aerial photography, etc.

Iowa State college, with over 6,000 students, is close by the field.

## NEW WING SECTION USED FOR KING BIRD

TO obtain the best results it was necessary to develop a new wing section for the King Bird plane which is being built by the Western Airplane Corporation. This problem was handled in a scientific way and following a series of experiments, calculations and processes of elimination, a new wing section has been evolved specially adapted for the performance desired. It was found to develop greater lift for a minimum of surface and resistance. This section is called the W. A. C., and will be forwarded to the Engineering Division of the Army Air Service for tests.

## AIRCRAFT EXHIBIT AT SESQUICENTENNIAL

A IRCRAFT exhibitions in the Aviation Department of the Sesquicentennial International Exposition have been sanctioned by the Aeronautical Chamber of Commerce.

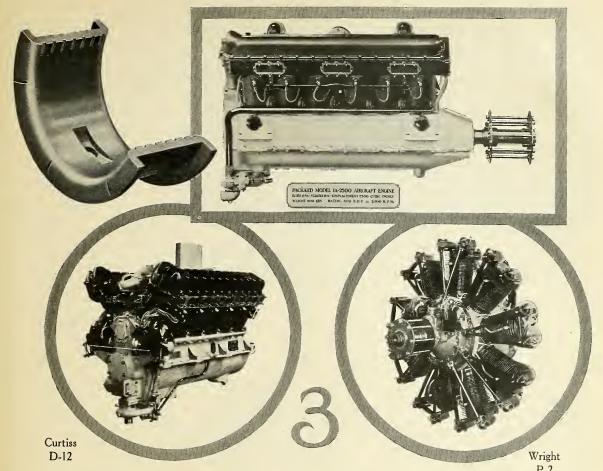
Models of airplanes, airships and balloons will be displayed, without charge, by suspending same from the ceiling in the large Transportation Building. There may be attached to these models appropriate signs bearing the name of the maker and short descriptive matter, thus affording splendid publicity. All those desiring to exhibit models at this exhibition may receive detailed information from George F. Zimmer, director of aviation, Sesquicentennial Exhibit Association.

## HARTMAN BOOSTS BURLINGTON

A RT HARTMAN, who has done much to advance the science of aviation in Burlington, Iowa, is now bending his efforts towards keeping his home on the flying map. He realizes the tremendous advantage that a well-equipped municipal landing field will give to a community and has worked unceasingly to keep this before his townsmen.

For the past few years, Hartman has been purchasing and rebuilding used planes. He has also trained a number of pilots, done exhibition flying and passenger carrying.

The rapid growth of commercial aviation owes much to men like Art Hartman,—and there are many of them,—who have believed in its future and therefore sold flying to their communities.



Great Airplane Engine Manufacturers have accepted Ring True Bearings as Standard

BESIDES supplying BOHN Ring True bronze-back Babbitt-lined bearings to most of the manufacturers of automobiles in the country — Ring True bearings have been accepted as standard by these three outstanding aircraft engine manufacturers.

BOHN PRODUCTS include Ring True Bearings, interchangeable and standard type, bronze black, Babbitt-lined—BOHNALITE Castings, both permanent mold and sand—NELSON BOHNALITE Pistons—we also manufacture replacement bearings and pistons for the Liberty Motor.

# BOHN ALUMINUM & BRASS CORPORATION EAST GRAND BOULEVARD, DETROIT

Say you saw it in AERO DIGEST



Board of Governors of the Aero Club of Pittsburgh.

Left to right, front row: Joseph M. Slater, 1st vice-frees.; Kay A. Tucker, secretary; Raymond M. Marlier, pres.; Louis T. Barry, treas.; and Robert A. Laidein, 2nd vice-free. Back row: Theodore Taney, William E. Close, Jack I, Grow, John J. Feery, H. Frank McCaffrey, and Wilm W. Booth, 3rd vice-pres.

### MODEL CONTEST HELD IN PITTSBURGH

THE Aero Club of Pittsburgh held its first boys' Model Airplane Contest on May 8th, at Rogers Field, the Pittsburgh airdrome. Some thirty miniature airplanes soared, dipped, struggled in the strong wind and then glided gently or dove headlong to earth. Only boys under eighteen years of age were eligible to participate. The wing spread was limited to forty inches, propulsion by rubber strands and construction performed by the boys themselves except for small metal fittings, etc., which could be purchased ready-made.

Although adverse wind prevented making any distance or duration records, the contest was successful and drew several hundred onlookers, including officers of the Army Air Service, clubwomen, Boy Scout leaders and scores of boys and men.

The ten prize winners for the Flying Contest were: Thomas Rife, Thomas Truby, Alexander Blair, Joseph Lutz, Charles Mayer, Wilbert Neimeir, Henry Gilmore, Kenneth McAdam, Robert Ballantyne, and William Patterson. The winners for the Model Contest were: William N. Poellett, William J. Gonder, Akron, Ohio, James Cook, Daniel Balner, James Bent, Norman Wurzer, George Ballinger, Arthur Willets, John F. Kissinger and Henry C. Gilmore.

The prizes ranged from bicycles, camping outfits, cameras, golf clubs, two yearly subscriptions to Aero Dicest, skates, etc., to minor sporting equipment. Congressman James M. Magee, a member of the club, presented a silver cup to William N. Poellet, the winner of the Model Contest. Arthur Willets and Henry C. Gilmore won the Aero Dicest subscription prizes. A special prize of a wristwatch was presented to William J. Gonder of Akron for the best seaplane model entered, and Russell J. Brinkley gave an aeronautical book to James Curtis for the most original design.

Following the contest and the presentation of prizes, six pilots gave a flying exhibition using three of the field's Government Jennies, a Curtiss Oriole and a new Woodson Express.

The Aero Club Committee in charge of the contest was as follows: Halsey R. Bazley and Frank Kinnard, general chairmen; Raymond M. Marlier, flying contest; Ray A. Tucker, model contest; H. Frank McCaffrey, registration; Earl T. Moores, prizes; and Lt. Royal B. Lea, flying exhibition. The judges for the Model Contest were: Col. Harry C. Fry, Jr., Hon. James M. Magee, Col. Wm Thaw, Lt. Royal B. Lea, and Ray A. Tucker; and for the Flying Contest; Louis T. Barry, Robert E. Drake, Robert A. Laedlein, Raymond M. Marlier, and Robert C. Wentz.

## PRESIDENT SIGNS CIVIL AVIATION BILL

THE signing of the civilian aviation bill by President Coolidge on May 20 establishes a Bureau of Civilian Aviation in the Department of Commerce and provides regulations for civilian flyers and for the operation of commercial air routes.

The effect on those now earning a livelihood from aeronautics will be governed in a measure by the judicious administration of this law.

Secretary Hoover says that he expects important developments in civilian aviation as a result of this legislation.

It is at least a start in aeronautical legislation and if it proves of value will be kept on our statute books. If not, it should and will be quickly repealed. There is no doubt that we must have laws for aeronautics but they must be fair to those who have borne the burden and suffered that flying might grow.

## PHILADELPHIA'S NEW AIRPORT OPENED

SATURDAY, May 22, saw the opening of Philadelphia's new airport when eight training planes assigned to the 103rd Observation Squadron, Pennsylvania National Guard, landed on the field. The planes were

delivered to the 103rd Squadron by Captain Charles J. Phillips, Air Office of the Military Bureau in Washington, and are of the JN type equipped with 180 h. p. Hispano motors. They were received for the Pennsylvania National Guard by Captain Batty and the other officers of the Guard.

The new hangars at the field are not quite completed and the planes will be stored at the Pitcairn Flying Field for a few weeks. Major J. Sidney Owens, Commanding Officer of the 103rd, flew one of the planes from Dayton.

## THE ARGENTINE FLIGHT

THE Argentine flyer, Bernardo Duggan, hopped off from Miller Field, New Dorp, Staten Island, on May 23, on the first leg of a 5,920-mile flight to Buenos Aires. It is the longest flight ever attempted between North and South America.

With Señor Duggan, in the Italian-built Savoia flying boat, are two Italian aviators, Captain Edwardo Olivero, the pilot, and Lieutenant Ernesto Campanello, mechanician, who made the Rome-Australia-Japan flight.

#### AIR MAIL BIDS ASKED

THE first step toward the establishment of contract air mail service between Detroit and Grand Rapids, Michigan, was taken on May 24, when Postmaster-General New forwarded to postmasters of the two cities instructions and proposal blanks calling for bids returnable noon, July 26, for operation of such a service.

If the service should be established it will mean the transportation of mail between Detroit and Grand Rapids in slightly more than one hour as compared with the fastest train service of more than four hours. No flying schedule has been mapped out, this detail being left for later decision between the Department and the contractors.

## FLORIDA AIRWAYS CHANGE SCHEDULE

A CHANGE of schedule has been made on the Florida air mail service which has been operated since April by the Florida Airways Corp. This new schedule is expected to more than double the usefulness of the service and to save a full business day on mail to New York and points North,

Under the old schedule on which the northbound plane left Miami at 7 a. m., Ft. Myers at 9:15 a. m. and Tampa at 10:20 a. m. the departing time in each instance was too early for the business man to reach without depositing his mail the night before, in which case most of the advantage of the speedier air service over ordinary mail was lost. Southbound the new schedule will provide a better local service in Florida. The schedule effective May 27 follows:

South Bound: leave Jacksonville, 1:15 p. m.; leave Tampa, 3:20 p. m.; leave Ft. Myers, 4:15 p. m.; arrive Miami, 6:25 p. m.

North Bound: leave Miami, 1:15 p. m.; leave Ft. Myers, 3:15 p. m.; leave Tampa, 4:30 p. m.; arrive Jacksonville, 6:25 p. m.

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Two-piece Head Band. 1.00

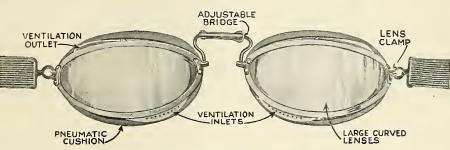
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#### BUFFALO AIRPORT

THE large tract recently purchased by the City of Buffalo is being transformed rapidly into an ideal airport. It consists of 527 acres, located 8 miles east of the city, bordering on Genesee Street, a well-paved, main highway leading directly into the heart of the city. The Lehigh Valley Railroad borders the property and affords switch track facilities: the main line of the New York Central is nearby; Cuyuga Road, a main highway north and south with concrete pavement, runs along the west border of the property and connects with all the main highways leading in and out of Buffalo.

The City is installing an extensive drainage system to insure safe landings even in the wettest weather. The east and west runway will be 3600 feet long and the northeast and southwest runway, 5000 feet long, insuring adequate space for handling any type of plane.

Buffalo has recently let a contract to Wm. E. Arthur & Co., Inc., of New York and Chicago for a brick hangar of the latest type. The concrete floor of the hangar has a gradual slope toward the doors which are of the rolling steel shutter type, electrically operated; one side and one end of the building are practically all glass set in steel sash with numerous ventilating un'ts; ample office, stock room and shop space is located so as to provide the most efficient maintenance facilities. A modern forced-circulation, hot-air, oil burning heating plant is being installed in a fireproof compartment.



C. H. Colvin, president of the Pioneer Instrument Co., and pilot Weis after flight-testing their new Travel Air.

and is so arranged that the heat may be cut off from the hangar space when the large doors are open and still retain the heat in the office and shops. In the main building steel columns support special trusses which are of sufficient strength to permit hoisting the heaviest engines or even an ordinary-sized airplane.

Yearly maintenance cost on these buildings is reduced to the minimum as they are economical to heat and the fire hazard is the lowest of any type hangar building. The overall height is low, a decided advantage for a hangar located on an airport where traffic is heavy.

Special attention has been given to anchoring the supporting steel columns securely in heavy concrete foundations, and horizontal steel rod bracing placed at the proper angles render the building safe even under the highest wind conditions. Adequate

electric lighting and power circuits are pro-

A seven and one-half million candle power revolving beacon is being installed definitely locating the field to night flying planes.

#### FAIRCHILD-CAMINEZ ENGINE TESTED

TEST flights were recently made of the Fairchild-Caminez engine, the first successful aircraft engine without crank-shaft and connecting rods or gears. It is installed in an Avro 2-seater biplane. Captain Richard H. Depew, Jr., well-known test pilot, was in charge of the demonstrations.

Harold Caminez, formerly in charge of the Engine Design Section, U. S. Army Air Service at McCook Field, Dayton, Ohio, and now an officer in the Fairchild Company, is the inventor of the engine. It was originally designed and developed at the U.S. Army Air Scrvice Experimental Station at Mc-Cook Field, and later it was brought to its present degree of efficiency by engineers of the Fairchild-Caminez Engine Corp. It develops 150 h.p., is air-cooled, and a cam and roller arrangement is used in place of the conventional crank-shaft and connecting rods. It is a 4-cylinder X-type with a projected frontal area of 3.9 square feet, and although of sturdy construction and designed for a service of life of over 500 hours its weight is less than 360 pounds.

The company's factory at Farmingdale, Long Island, has been equipped for the manufacture of these engines.

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FOUR PASSENGERS SEATED COMFORTABLY
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These three facts make the aviator realize the tremendous earning power of the HESS "Bluebird" even before a price of \$2250 flyaway Detroit is mentioned.

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Win at Every Event at Both the Brea and Little Rock Air Meets

## THE BREA AIR MEET

Fred Hoyt with a C-6
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Commercial Planes at
the recent Brea, (Cal.)
air meet. He also won
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FRED HOYT

Travel Air Representative
for the Pacific Coast

## LITTLE ROCK MEET

At the Little Rock (Ark.) Air Meet, race for airplanes of 100 horse power or less, Fred Hoyt won first place and Walter Beech second with OX5 Travel Airs. In the free-for-all race Walter Beech won first honors with a J4 Travel Air.

Crowds at both meets were amazed when pilot Hoyt with a stock model Travel Air demonstrated flying not heretofore seen with a commercial airplane.

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## NOTES FROM FRANCE

By R. C. Wood

Chairman Paris Post, American Legion

TWO hundred and fifty pioneer aviators of France, Italy and other allied nations, including four members of the Lafayette Escadrille and three members of the Cheruffienne Air Squadron which recently fought in Morocco, gave enthusiastic approval to the newly formed International League of Aviators, of which Clifford B.



Wide World Photo.

Leon Balthiat, Clifford Harmon and
Col. Falchi.

Harmon of New York is organizer and president, at a banquet of Les Vieilles Tiges, the oldest French aeronautical society.

At the end of the banquet, M. Laurent Eynac, French Under-Secretary of State for Aviation, pinned the cross of Chevalier of the Legion of Honor on Mr. Harmon beside the cross of Officer of the Crown of Italy, which had been presented to him the day previous by the Italian Ambassador, Barone Romano Avezzano.

Mr. Harmon presented a trophy to the Italian flyers to arouse aerial competition in Italy, and another trophy, in memory of the Lafayette Escadrille, with Major Raoul Lulbery as its central figure, to Les Vieilles Tiges. The Lafayette Escadrille Trophy will be flown for annually, and the winner will receive a cash prize of 10,000 francs given by Mr. Harmon. Before any aviator can fly for this trophy he will have to be a member of the League of Aviators and have won the contest in his own country.

The International League of Aviators is to consist exclusively of aviators and headed by pioneer pilots in every country in which it may be decided to form branches. At the organization meeting in February, Mr. Harmon was chosen the first president of the League, with M. Balthiat, president of Les Vieilles Tiges of France, and Colonel Falchi, president of the Pioneer Aviators of Italy, as his associates on the board of directors. The executive committee consists of Commandant Maceratini, Aeronautical Attaché to the Italian Embassy in Paris.

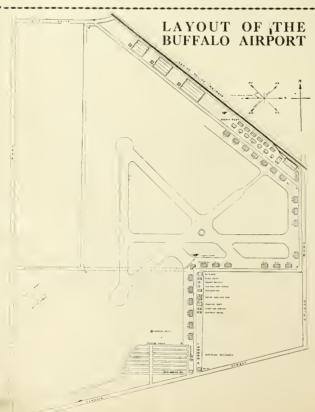


International

The Harmon trophy presented to the Aviator's Post, American Legion, New York,

Leon Balthiat, Col. Falchi, Col. Charles W. Kerwood, Clifford Harmon and P. Schneider. A resolution was passed making all aviators holding their pilot's license or brevet before August, 1914, members of the Lafayette Escadrille, the presidents of all recognized aerial clubs who hold pilot's certificates, General Mitchell, Captain "Eddie" Rickenbacker and the great Spanish flyer, Major Franco, honorary members of the league.

A third Harmon trophy, pictured here, was unveiled and presented to the Aviator's Post No. 1, American Legion, New York, at a ball given by them in February.



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## ACHIEVEMENT!

Lieutenant Commander Richard E. Byrd, Roald Amundsen and every member of their expeditions have set new marks in aeronautical achievement. Their success is another indication of the great strides being made in the science of aeronautics.

Behind such great events as these is an industry which is growing and progressing at a tremendous rate. The Aircraft Industry is the fastest growing and most progressive new industry in the world to-day. Aero Digest is keeping pace with that growth and progress.

The success of this magazine, in the past eighteen months alone, is well-known throughout the aircraft field. It is preferred by aircraft organizations as the leading advertising medium not only because it has the largest circulation but also because it has the greatest reader-confidence.

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### M A F TOURNAMENT

THE Hyde Park Y.M.C.A. won the Fourth Annual Tournament of Miniature Aircraft Fliers in the Municipal Pier, Chicago, on May 6. The lads of the M.A.F. Unit captured the following trophies: Fatherand-Son duration cup given by Roseland Lions Club Class C (beginners) duration cup, given by Central Lions Club; speed trophy given by Ambrose Wyrick; Dirigold cup given by the Dirigold Corporation for Class A duration.

The Mark White Square boys came in second, capturing the Florence Mac-Beth cup for Class B duration, L. W. V. Wilms cup for glider duration, and second in Class A duration. The Hardin Square and McKinley Park boys were third and fourth.

These classes, whereby beginners graduate immediately into Intermediates when they win, and on up into the expert Class A if they continue to win, created a tremendous interest. It seems a fair handicap arrangement. This is explained at length in the 1926 edition of the M.A.F. Rule Book.

## CHICAGO - DALLAS AIR MAIL LINE OPENS

THE first Carrier Pigeon mail and express plane of the National Air Transport (Chicago-Dallas) line swept down the runway at the Maywood flying field, Chicago, at 6:05 a.m., on May 12, in charge of Pilot Paul E. Johnson. Fifty minutes later. Edmund Matucha took off in a second Carrier Pigeon with the remainder of the 1,900 pounds of mail. The relay plane to which the cargoes of both were transferred at Kansas City got to Dallas at 5:30 p. m., making the flying time from Chicago 11 hours and 25 minutes instead of 11 hours and 50 minutes as called for in the regular schedule.

Meanwhile, at 8:15 a. m., two ships took off from Love Field at Dallas. Two other ships relieved them at Kansas City and reached Chicago at 8 and 8:35 p. m. respectively. Hence, in spite of a slight headwind and the newness of operations, the flight north was made in 11 hours and 45 minutes. 5 minutes less than the time allotted in the regular schedule

Carl F. Egge, Superintendent of Air Mail for the Eastern District, took charge at Maywood during the first day of N. A. T. operation. In view of the large amount of mail directed to New York and points east, which he learned that the Pigeons were carrying north, he sent off the overnight (Chicago-New York) flyer at its usual time in the evening and assigned Pilot S. J. Short and a Boeing plane of 1,000 pounds capacity to carry only the letters and packages from the

The christening of the N. A. T. plane "Chicago" on the afternoon of May 8 was made the occasion for the opening of the Chicago municipal airport. For two years, the Aero Commission under Major P. G. Kemp has been preparing this field for flying purposes. It is a mile long and half a mile wide. For days before the christening, workmen were busy draining the land and forming a

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2,600-foot V-shaped runway, 100 feet wide. Hangar and shop spaces will be rented to aviators and air transport companies. The city has made an appropriation of \$225,000 for fully developing this plot and it will undoubtedly be a credit in time. As it is a dozen miles from the Post Office, a landing field which may be used to take on and deliver mail and, eventually, passengers will probably be formed on the Michigan Lake front near the Loop district within the next year or two. Maywood Field, which the Post Office now uses, is even farther west than the municipal field.

Major Kemp presided at the brief speaking exercises which came before the christening. Talks were made by W. R. Dawes, cousin of the vice-president of the United States and president of the Association of Commerce, Alderman Dorsey Crowe, chairman of the City Council Committee on City Planning, Postmaster Arthur C. Leuder and John J. Mitchell, Jr., treasurer of the National Air Transport, Inc.

## THE PRINCE OF WALES TRAVELS BY AIR

H. R. H. the Prince of Wales had occa-sion to hurry back to England from the Continent during the recent British labor

He made the trip by air and with his staff crossed from Le Bourget on a Handley-Page-Napier W. 10, which is fitted with two 450 h.p. Napier engines.

During the journey he took his place in the cockpit alongside the pilot, Captain O. P. Jones.

#### ALTOONA AIR DERBY

THE Altoona auto racing season will open with a 250-mile National Championship event on June 12, and will be preceded by an air derby, staged by Captains Lloyd Yost and Ralph Haynes.

W. A. Morgan, manager of the Speedway Association, is a great "air fan" and conceived the idea of the air derby as a means of attracting additional crowds to the races. He has done a great deal to boost civil aviation in his community.

The Altoona Aero Club, which was organized in January, is cooperating with the Speedway Association in entertaining the visitors at the races.

The officers of the Club are: H. M. Mc-Cullough, president; John L. Prutzman, vice-president; Walter A. Hite, secretary; Lieut, Fred D. Hite, treasurer. The directors are: Major Theodore A. Arter, Capt. Ralph M. Haynes, Clyde S. Reed, Charles A. Eby and James S. Thompson.

Altoona Airport, comprising 30 acres, lavs east of the city along the main line of the Pennsylvania Railroad. The field is approximately 1,500 yards east of the Altoona Speedway, which serves as an excellent marker. Gas and oil can be secured at the field at all times.

## NEW OKLAHOMA FIELD

THE Union Aircraft Corp., Blackwell, Okla., have opened their landing field, equipped with all accommodations for visiting aviators. Full service including gas and oil are available, and free transportation to the town, one and a half miles distant, is provided.

The field proper comprises 80 acres of sodded, level ground, clear of hazards, having a half-mile run take-off in any direction. The field will be equipped for night flying within the next month. A 24-inch searchlight beacon visible 75 miles at 2,000 feet altitude will be the night signal. Opening and closing of the throttle will notify the attendant at field to prepare flood lights pointing into the wind, revealing safe landing. Day markers are the regular 100 ft. circle with "T" in center.

The field is located due west of town, 3/2 mile south, 1/2 mile west, of two 300 ft. chimneys.

The City of Blackwell and the Union Aircraft Corp. extend a hearty welcome to visiting airmen at all times.

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## BRITISH ACCEPT CURTISS D-12 ENGINE

I MMEDIATELY after the 1923 Schneider Cup Race at Cowes, England, in which first and second places were taken by Curtiss racers equipped with the Curtiss D-12 motor, the British Government became interested in the motor, and purchased two for test purposes. Shortly thereafter, the Fairey Aviation Co., Ltd., acting entirely on its own iniative, entered into a preliminary contract with the Curtiss Company for the manufacture and sale of the D-12 in England. This company then designed, manufactured, and submitted to the British Air Ministry the Fairey "Fox," a two-seater observation plane built around the D-12

The performance of the Fairey "Fox" favorably impressed the Air Ministry, and in spite of considerable opposition and pressure from other British manufacturers, an order was placed for a substantial number of these planes, to be equipped with D-12 motors. The order, however, was contingent upon the D-12 successfully passing the 100-hour type test, which under British methods far exceed in severity any test yet imposed upon aeronautical engines.

A D-12 engine was accordingly prepared for the test and shipped to England coincidently with a number of stock engines.

After all the preliminary power runs and inspections had been completed, the test engine ran 87 hours when a small screw in an oil pump gear worked loose and interfered

with the oil system. While this was recognized as purely an accessory difficulty, nevertheless the rules governing the test are ironclad, and the decision was amounced: "Test not completed—engine not approved."

To meet its scheduled deliveries on the "Fox," the Fairey Company was faced with the necessity either of substituting another type of motor in the "Fox," or of immediately presenting another D-12 for test. An exchange of cables indicated that the Curtiss Company, because of its American Government orders, could not make immediate delivery of a new test engine. The Fairey Company therefore, at the recommendation of the Curtiss Company, presented for test a stock production D-12 engine from the original lot received in England.

An unforeseen circumstance which added to the severity of the test was the fact that the Fairey Company desired, in the "Fox," the greatest available horsepower, and therefore all the engines on hand, including the one submitted for the second test, were of the high compression type, developing some 30 horsepower more than the standard service engine. And high compression engines, of course, are supposedly more susceptible to mechanical ailments than low compression ones. No allowances could be made for the difference in specifications between American and British practice which meant that the D-12, to be approved, had to operate under conditions for which it was not primarily designed. These facts must be realized in order to properly gauge the remarkable performance of the D-12.

The second test was a complete success, and the British Air Ministry officially accepted the engine and approved it for use in British military planes. While no official report, other than that the engine has been approved, has been received here, it is said that the engine dropped only 2½ horsepower in the hundred-hour run, showed uniform fuel and oil consumption (the oil consumption being particularly low) and on being torn down for inspection was found to be in excellent condition.

The acceptance of the D-12 motor by the British Air Ministry represents the first concrete recognition of an American aeronautical engine by a European power since the World War. This, together with the fact that all the other important European governments are now looking to England for their advanced engine design, places the D-12 in a peculiarly favorable position.

The engine which will be known in England as the Fairey "Felix," will probably go into single-seater pursuit and two-place fighter airplanes, in competition with planes powered with British air-cooled motors.

The question of the relative superiority of water-cooled and air-cooled engines for this type of service is still an open one. During recent years the British have been developing the air-cooled pursuit, while the American Air Services have been fostering the development of the water-cooled D-12 pursuit. The British are adopting the water-cooled D-12 pursuit, and our Naval Engineers are seriously experimenting with the stir-cooled type.

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- 1. Aviation History Aviation Nomencla-
- ture 3. Airplane Construction
- 4. Airplane Rigging
  5. Aircraft Instruments 6. Aircraft Engines
- The Hispano-Suiza Engine The Liberty Engine
- The
- 9. Ignition 10. Carburetion
- 11. Aerostatics12. Theory of Flight
- 13. Aerology 14. Air Navigation
- 15. Modern American Aircraft Engine Development 16. Practical Flying In-
- structions

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The

AIR

AERO DIGEST will award a prize of \$5 each month for the best joke published. Only jokes pertaining to the aircraft field will be considered. Address the "Picked From The Air" Department, Aero Digest, 220 West 42nd Street, New York, N. Y.

Otto E. Jess, Pateros, Washington, won the prize for June with the following:

In a small Western town a motion picture entitled "The Air Hawk" was being featured, followed by a dance. Present at the dance was the town's only "flying cadet," who was introduced to an Englishman as our "air hawk." The Englishman, after observing the cadet dancing, exclaimed, "By Jove! He looks to me more like a chicken hawk."

It is reported that while on his lecture tour recently in a mid-western state former General William Mitchell of the United States Air Service was being entertained by the Governor of the state. While out automobile riding they were stopped by a motor-cycle policeman for speeding.

"Don't you know who I am?" asked the Governor. "I am the Governor of the state and this is 'Billy' Mitchell with me."

"Hell!" replied the traffic policeman, "and I suppose that is Calvin Coolidge driving you? Tell it to the Judge.

—Charles A. Pursley.

Rastus: "Whyfo' does you call your gal 'Valspar,'

Sambo: "Because all de boilin' watah in de world ain't going to turn her white."

—Great Lakes Bulletin.

According to a well-known flyer, the future of aviation will depend entirely upon the training received by aviators. An aviator, quite naturally, should know the business from the ground up.

-Detroit News.

You never can tell. It is doubtful if even the aviator should burn his bridges behind him.

Visitor: "Are you going to be a great man when you grow up, Willie?"

Willie: "You bet! I'm going to be an Arctic explorer."

"I like your spirit, boy. There is a great deal of glory to be gained in a career of that kind."

"Yes'm and you don't never have to wash your face."

During the war, a cadet at the Naval Air Station at Miami, Florida, was "turned loose" with an "H" boat and told to stay in the air an hour, making turns, landings, etc. The cadet took off, made one trip around the course, landed and taxied up to the beach and presented himself to the flight officer.

"What's the matter," said the flight officer, "you've only been gone ten minutes and your orders were to stay out an hour."

"I'm sorry sir," said the cadet, "but it was so terribly bumpy I just couldn't stay in the air any longer. Even the crows were all walking back to Miami along the road."

-II'. P. Bell.

The inspecting General had just viewed a formation of cadets land. Two nosed over, one washed out his landing gear, the fourth pancaked and the fifth, landing in a tree, had not yet reached the earth. The General turned to the Commanding Officer and said:

"A helova fine lot of ship smashers you've got here!"
"Yes, sir," replied the C. O. "Do you know that I have taught that bunch absolutely everything I know, and yet they don't know a darn thing!"

—J. L. Derfus.

He was an up-to-date, well-dressed collegian, and this was his first day at the flying field. Near the Canuck, the small airplane, he noticed a crowd of men all gathered about what seemed to be the pilot. The crowd was singularly, over-whelmingly composed of members of the male sex. Our hero wondered at the deep interest shown by the men in a pilot of an airplane, and he thus casually strolled over to partake of the general curiosity. The center of all eyes, he at once noticed, was an aviatrix. With a superior swagger, he brushed through the crowd, and asked the intrepid female, "Aren't you often mistaken for a man?"

"No," she answered, "are you?"

-New York University Medley.



## "As the crow flies"

Aviators have much to tell the non-flyer about the mythical straight line. It's all right when there's open country below, but how about seas, forests, and mountains offering not so much as a hand's breadth of landing space?

For years and years Rand McNally maps have been relied upon as trustworthy guides through unknown territory. Today air-pioneers re-assert this faith of early explorers. From the youngster trying his first wings to the campaigner making and breaking new records, there's the same confidence. They rely utterly upon the accuracy of their Rand McNally maps, the same that are sold everywhere for 35c.

Information sources built up through more than half a century of map making contribute to the up-to-date completeness of each and every map. Distances are accurate, and changes in terrain are checked and corrected in each new printing. This is the assurance in using any Rand McNally map for the purpose for which it is intended.

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Two-place OX5 dual control Yackey Sport, only used 10 hours. Guarantee motor and plane to he in excellent condition. Sale price \$1330, delivered any place for 10c, per mile.

One rehuilt OXX6 Canuck, dual control, fuselage just rehuilt and recovered, guaranteed to he in excellent condition, fine looking and flying ship at \$1050.

One rebuilt OXX6 Canuck, dual control, three-place, reconditioned throughout, guaranteed to he in excellent condition, a very good huy at \$1150.

Single-place OX5 Yackey Sport, 38-gallon gas capacity, complete, easy to fly, with overhauled OX5 motor \$1075, without motor \$875.

One Lincoln Standard Tourabut, 3-place, 180 Hisso motor, has had only 6 hours since overhaul, new Hamilton propeller, new cartridge core radiator, 50-gallon gas tank, fine shape, \$1500.

OX5 motors, just rehuilt in our shops, guaranteed in excellent condition, will demonstrate on test stand hefore shipping, only few left. \$225.

Liberty 6 Hall Scotts, parts interchangeable with Liberty 12 parts. Excellent type motor, 220 h.p., weight only 530 lhs. Low gas and oil consumption. These motors excellent condition, just test run, only four left; big hargain at \$550 each. Lot of Hisso parts. Will send list price, \$450, well worth \$700.

Lot of four 12-cylinder Renault Motors 300 h.p., with many extra parts, \$875.

Canuck wing covers, lowers only, real Irish linen, \$15.

Irish linen, Grade AA, 36" wide, 90c. per yd.

Nitrate dope, new stock, 5 gallon cans, \$10.

Nitrate dope, new stock, 5 gallon cans, \$10.

Thread: tape; varnish; enamels; lacquers — all colors; safety wire; fihre-lined gas hose (all sizes), 60c, per foot; new shock cord, 20c. per foot; windshield stock, \$2 per lh.; new OX5 rings, 50c.; new OX5 valves, 50c.; hose clamps, 10c. each. All kinds of new stock for huilding, overhaul and repair work. Goggles, new type, \$4.50 each. Special helmets, \$5. Helmets in dozen lots, \$4.50 each. 12-foot distance type thermometers, radiated, new, original box, \$8.50. New stock \$6 x 4 casings, \$11.40, new tuhes, \$2.75. TM fuselage converted to two-plete less instruments and covers, \$225. TM fuselage converted to two-place OX5 less motor and cowls, \$475. Steel tubing motor mounting for OX5 in TM, \$75. Nose spinner for OX5, TM, \$15. Lower TM wings, new government covers, \$15, crated \$20. TM landing gear vees, new, each \$10. 26 x 4 wheels for JN4, Canuck OX, TM, \$5 each. DH landing gear vees, wood, \$7.50 per pair.

Three hrand new OX5 Jennies as received from the Air Mail. \$900

Three hrand new OX5 Jennies as received from the Air Mail. \$900 each. These ships are complete in every detail and have new Hammonsport Curtiss OX5 motors installed.

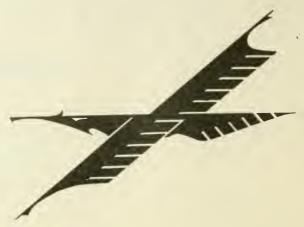
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## REMARKABLE RECORD OF THE AIR MAIL

THE transcontinental mail routes by air and train are both vitally essential in the needs of American business. The Twentieth Century and the Broadway have their special patronage of busy executives, because of the importance of rapid transit to the success of their plans. But, when rapid transit is not the first requirement, the slower trains carry the general bulk of the traveling public. The same analogy operates in connection with the transportation of mail.

During the recent blizzard, the important mail trains from Chicago to New York were running late. The Air Mail out of Chicago on one of the dates arrived in New York some two hours ahead of time, even utilizing the primitive method of man and sled from the landing field and stopping one of the fast southern expresses at New Brunswick, N. J., thereby delivering the mail at the New York Post Office considerably ahead of the prevailing fair weather schedule.

For nearly a year the transcontinental Air Mail Service in and out of New York landing fields, as well as the New York to Chicago Air Mail Service, has had a high percentage of "on time" arrivals. For a pioneering development, this is a remarkably clean record, one closely approximating and in many instances exceeding the arrivals of transcontinental mail trains.

The Air Mail Service during the past long winter months has met its severest testing—snows, fogs, blinding rains and sleet, testing the courage of the most faithful and competent pilots. Those great pioneers of the new era of rapid transportation have developed a skill and an ability for endurance far more exacting than that called for in the dering exploits of the air squadrons in France.

We know and are constantly being reminded that the non-delivery of Air Mail is a great rarity. This through day and night service, begun less than two years ago, is now a fixed item in the mailing schedule of many of America's biggest users and recipients of intersection and transcontinental mailing.

## CHICAGO-ST. PAUL AIR MAIL TO START

S ERVICE on contract air mail route No. 9 from Chicago, Ill., by way of Milwaukee and La Crosse, Wis., to St. Paul and Minneapolis, Minn., will be inaugurated June 7. When this route is in operation it will afford a fourteen-hour service by air mail between New York and St. Paul and Minneapolis. The schedule will connect with the overnight service between New York and Chicago, and mail leaving New York at 8 p. m. will reach St. Paul and Minneapolis before noon the next day.

Say you saw it in AERO DIGEST

#### NEW WISCONSIN FIELD

A NEW flying field is nearing completion at Green Bay, Wisconsin, and will be managed by the Humming Bird Aero Club. The officers of the club are: Cecil E. McGillan, president and chief flyer; B. B. Baker, in charge of hangars and flights; and James Tritch, advertising manager and pilot. All pilots will be welcomed at the field.

## WRIGHT AERO. CORP. MARKER

A MARKER for Paterson, N. J., has been placed on the roof of the main factory building of the Wright Aeronautical Corp. The words "Wright Aero. Corp." are in letters twelve feet high made of white tile on the black background of the tar roof.

The location of this marker is approximately 6½ miles N. W. of Teterboro Airport, Hasbrouck Heights, N. J., and 5½ miles S. E. of Murchio Field, N. J.

## CLEVELAND-PITTS-BURGH AIR MAIL

C LIFFORD BALL of Pittsburgh was awarded the contract for operating the air mail route from Cleveland to Pittsburgh, a distance of 100 miles.

Ball will use three planes of the Swallow type, one to be immediately available and two to be held in reserve. Each plane is to maintain a speed of 120 miles an hour.

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MEMBERSHIP in the U.S. Air Force Association is open to any person interested in the proper development of Aviation as the predominant element of the national defense. This Association stands squarely on the policy recommended by the American Aviation Mission of 1919, the special House of Representatives Aircraft Committee of 1924-1925, and Colonel William Mitchell, which provides for the establishment of a Department of National Defense with the Army, Navy and Air co-equal.

There are NO dues or fees in connection with membership in the Association. Simply fill out, detach and mail the following application blank.

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WHEN you want anything in the line of aircraft materials WHEN you want anything in the line of aircraft materials you want prompt shipment. The size of our stock amazes most aviators who visit our warehouses for the first time. Flyers from all parts of the country say it is by far the largest and most complete stock they have ever seen. Our quality is unsurpassed. Prompt shipment on all orders under personal attention, added to our central location, assures immediate delivery. Order where the stock is complete. Last year's sales of \$200,000 indicate the volume of our stock and the large number of our satisfied customers.

Lowest prices on quality merchandise.

#### ENGINE PARTS

ENGINE PARTS

OX5 valves: exhaust, 40c; intake, 30c; cylinders, \$10; connecting rod assemblies, \$2.50; tiedown yoke, 25c; crankshatts,
\$10; crank-case: upper lulf, \$50;
lower half, \$16. Intake rockerarms, \$1; water pump assemblies,
\$6; exhaust manifolds, each side,
\$3.50; exhaust pipe with elbows,
\$1.50; intake manifold elbow, \$1;
intake Y pipe, \$3; Zenith carburetor assembly, \$12.

#### MAGNETO PARTS

MAGNETO PARTS

New model L-8, Sinms magneto, (right or left hand)
equipped for booster: for Hissano, \$20; for OXXG, \$25; new
D-81 Berling magnetos for OXS
\$16; new model 800 Dixie magneto, (right or left hand) for
Hispano, \$30. We carry a complete stock of spare parts for the
L-8 Simms magneto.

#### INSTRUMENTS

INSTRUMENTS
10-lb. air gauge, \$1: oil gauges:
25-lb., \$1; 50-lb., \$1.50; 60-lb.
\$1.75; 120-lb., \$2.50; Zenith new
type altimeter, 4-inch dial, \$9;
17-jewel 8-day clocks, \$10: brand
new Fahrenheit gauges, \$6.50;
Johns-Mansville tachometer shait
and housing 7½ to 10 feet, \$6 to
\$7.50; Johns-Mansville adapters,
1 to 2, \$6; gas gauges, \$5; knife
switch, 50c; gasoline tank shut-off
with sediment bulb, \$1.50; Bosch
double ignition switch, \$3.50.

#### MISCELLANEOUS

Grade A cotton, 35c yd.; plain tape, 3c. yard; 2" x 2½" scalloped tape, 6c yard; cloth propeller cover, \$2; new JN radiators, \$25; 26 x 4 Goodyear casings (new production) \$13.50; 26 x 4 inner tubes, \$3; DH 750 x 125 inner tubes, \$3.50.

#### PROPELLERS (New)

For Hispano, 180 h.p.: copper-tipped toothpick, \$50; cloth-tipped toothpick, \$30; leather-tipped Westmoore, \$25. For OX5: cop-per-tipped toothpicks from \$10 to \$20 each; copper-tipped clubs from \$10 to \$15 each. For Law-rance 28 h.p. 2-cylinder: \$15.

#### DOPE AND VARNISH

New production clear nitrate dope, 50-gal. bbl. lots, \$1.45 per

\$100

gal.; 30 gal. half-bbl, lots, \$1.60 per gal.; 5-gal. cans, \$1.90 per gal.; 1 gal. cans, \$2. Aerospar clear varnish: 30 gal. drums, \$2.75 per gal.; 5-gal. cans, \$3.75 per gal. 1 gal. cans, \$4. Genuine Valentines Valspar varnish: 5-gal. cans, \$5.50 per gal.; 1 gal. cans, \$6.50.

#### FLYING EQUIPMENT

Summer-weight flying suits, white, with insignia, \$6.50; khaki government-model with big map pocket, \$10; NAK goggles, Resistal glass, \$4.76; Jumbo, \$3.50; French design gogglettes, \$3.50; Italian gogglettes, \$6.

#### NEW STANDARD JI AIRPLANES

New Standard J-1 airplanes complete with new OX5 motor, \$1100; complete with government-overhauled OX5 motor, \$900; complete with used OX5 motor, \$900; complete with new OXN6 motor, \$1300; complete with slightly used or overhauled OXN6 motor, \$1100; complete with 150 h.p. Hispano motors, (all motors are in Al condition and completely overhauled) \$1500 to \$1800; complete less motor, \$650.

#### MOTORS

MOTORS

OX5, used, \$75 to \$150; OX5 army-overhauled, \$250; OX5 our own overhauled, \$200; brand new OX5 in the original crates, prices from \$275 to \$500. These low have purchased—avrite for full details. OXX6 used, \$175 to \$250; OXX6 overhauled, \$350; OXX6 (used about 20 hours) \$400; OXX6 brand new, \$700; \$0 h.p. Le Rhone, (used about 5 hours) \$30; new \$0 h.p. Le Rhone, \$50; Model A Hispano, 150 h.p., A1 condition, completely overhauled, \$500.

We have the largest stock of airplane motors in the United States. We just completed the purchase of 1500 brand new OX5 motors from the Horace E. Dodge Boat Works of Detroit. We believe these are the last new OX5 motors that will ever be available. We have atready soft a state of the state several hundi

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No charge for damage to planes Instructors are men of long experience who take personal interest in their students, thus reducing to a minimum, any danger of accident to ships and students. Only new equipment is used for instruction purposes. Best of living conditions and very reasonable rates for board and room. Transportation to and from field furnished without charge, those an aviation center for your instruction. You can learn to fly here.

Write for complete catalog and literature.

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85 miles East of Kansas City On Chicago & Alton and Missouri Pacific Railroad

### AIR - HOT AND OTHERWISE

(Continued from page 328)

I sometimes wish I were a big alarm clock. As big as the Capitol building at Washington. I'd go off and try to wake the people up.

A NYWAY aviation this month has settled that great question: Are there red stripes on the North Pole?

When the Senate reported the Army Air Bill which the House had passed, the provisions recommending the construction of ten airships had been eliminated in committee on the solemnly stated ground that this type of aircraft is "of little value."

This sample of profound senatorial wisdom was radioed to Amundsen, reaching the Norge just as he was flying at leisure over the last secret places of the world, and making observations which will open a new and infinitely shorter freight and passenger route for the world's trade from Europe and America to Asia. That queer sound which scared the polar bears was a loud Norwegian laugh.

The great explorer tried to say a little something then, but found the episode had struck him dumb in all three languages-English, Norwegian and Wireless. As he knows no others he was temporarily helpless which explains that baffling period of silence. Though Italians had financed his ship he couldn't even shriek that dread Italian word "Spaghetti!" as an expression of his shocked opinion of the American legislative mind. What a pity. How appropriate that rich word would have been thus utilized!

THESE reflections and a few others which I find so difficult to express politely that I don't dare put them into print, lacking asbestos paper for these pages, explain to me why such men as Macready are resigning from the Air Service.

Too bad to lose Macready! Specially adapted. Great flyer. Training cost the Government a lot, but he has given much in glory and efficiency in payment. He could have given more. Now he can't.

The heads of any other enterprise would battle to keep a man of that sort permanently interested in the game.

But why should he or any other first-class American citizen tolerate the nonsense, implied insults, outrageous and ponderous stupidity of such Governmental management as we've been having in our aviation service? Enough's enough.

There's food for thought in this Macready resignation and the others handed in or threatened. Hard to get men that can be trained. Hard to train them when they have been found. Impossible to replace them when they leave, for they pass into other lines of effort and all their special aptitude—the very special aptitude we'll need if America is to count in the air-is lost.

Such episodes are like "Smallpox; Keep Out!" signs on a house. They discourage all who have been thinking about entering.

A boy who wanted a new job was reading a "boy wanted" sign in a store window just as the boy who had been employed there was thrown out to land on his left ear. The new boy was a philosopher, a boy of native sense, a true American, just the sort that we want

in the Army, in the Navy, in the Air Force. "I reckon," he reflected, "that I'd better try to get a job on down the street aways."

It is a pity that we should be making American young men feel that way about the nation's Air Serv-

Furthermore, at every field the housing conditions are so bad, especially as concerns fire hazards, that much as any sensible man must dread a flight in some of the planes furnished to our officers and men, they know that they are more comfortable and safer in the air than their families can be down at their own firesides.

This irks them. Like other young Americans at the right age those who have yielded to the yearning for domestic life wish to give their wives and children comfortable, safe homes. Few if any members of the Air Services can do that.

The quarters provided for our flying officers are rattletraps and firetraps in most instances. Wind-tunnels have their usefulness in aircraft testing laboratories, but officers dislike to have their wives and children in homes that could qualify for such a purpose.

Perhaps daddy, when his time for flying duty comes, has to go up in what he and his pals have learned by tragic experience to call a flying coffin, but he hates to have his family live in a house that's likely to become a funeral pyre. Cremation is all right for those who like it-but not when it's unexpected.

Everything—the pay offered to the men, the quarters given them to live in and what little flying material they have left to work with (superannuated, extra hazardous), is of the sort which can be little calculated to attractively invite the youngster to join the United States Army's brood of eaglets.

This can be laid only at the doors of the War Department.

If the least intelligent of the Congressmen who have appropriated nearly half a billion dollars since the war had had the spending of that money, instead of having had to pass it on to those who apparently enjoy making all air-minded soldiers suffer, they would use it for far different purposes and in far different ways than those which the stupefied officials of the War Department and the mentally atrophied General Staff members have settled on.

#### "HELL'S BELLS" O'NEIL

(Continued from page 338)

pens of my aunt are lost.

"In Hangar Two, I hear one of the cubs say to his Admiral, 'You little shrimp, your father and mother weren't married were they? And the Admiral grins and pops back, 'No, I thank you.'

"Well, I damn near died. But before I had time to, the next sub says to his Admiral, 'Pick up your feet you little wart or you'll stumble over the seat of

your pants.'

"Well, I damn near wept. But before I had time to, the next sub says to his Admiral, 'How'd you like to take a flying zoom at the moon?' And the Admiral grins and says 'If you please, honorable, I think.'

"At that I stops in the hangar door so's the rest of the gang ahead could get well out of earshot. Then,

(Continued on page 390)

## LEARN to FLY



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Aviation is no longer a mystery—no longer a hazard; no, it is a business, growing greater and more important; you can qualify as a mechanic, engineer, repair man, builder or a pilot.

opens up a world of opportunities for young men. The Sweeney System has no planes to sell, and sticks strictly to teaching both ground work and pllotage. Sweeney Airport is one of the best and pllotage. Sweeney Airport is one of the best and satest fields in the U. S. All the resources of this Million Dollar School insure you the best, most practical instruction. Mechanics earn \$50 to \$150 a week. Flyers, up to \$500.

The Sweeney System

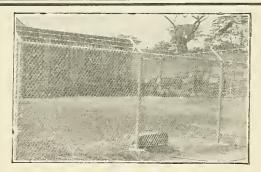
is divided into two parts. First: You are thoroughly taught in the ground school. This fits you as an aviation mechanic, You can build your own plane and do anything required in aviation mechanics and construction and repairing when you have finished this work. You are thoroughly taught motors, etc., and work with thousands of dollars worth of new material, and all types of engines. worth of new material, and all types of engines. Secondly: After completing this work if you want to be a pilot you take ten hours of flying. Now when you understand that two to seven hours is a support of the pilot of the pil

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for full details of this aviation mechanical course and photographs of planes and equipment actually used; also full information as to the commercial end of flying and opportunities for young men.



## EXCELSIOR CHAIN LINK FENCE



#### Better Protection for Landing Fields

EEP your aviation field clear of undesirable persons by using Excelsior Chain Link Fences. Aviators and spectators will be safer as a result. These strong fences also provide security against theft. They cannot be easily broken down or climbed. Provided with wide gates through which planes can be towed. can be towed.

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WICKWIRE SPENCER PRODUCTS





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## Equal to the most severe punishment insuring safety. A safety factor of 8.

The fuselage construction is of spruce throughout, covered with 1/8" three-ply birch waterproof veneer. This construction will stand up under all weather conditions.

HAS A FINISH EQUAL TO A PIANO, WHICH MAKES IT VERY ATTRACTIVE TO PASSENGERS.

This type is powered with either the 260 h.p. Salmson water-cooled radial or the Wright 200 h.p. air-cooled radial. Has the same performance with either motor. A SEATING CAPACITY OF FOUR, OR A PAY LOAD OF 600 LBS.

Can be successfully operated from a field 800 feet square.
Will land in 500 feet and take off in 150 feet with full load.
Price with Salmson engine, \$3500 f.o.b.

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AN EXCEPTIONALLY WONDERFUL PLANE FOR
THE MONEY

Orders must be placed now if delivery is required soon.

WOODSON ENGINEERING COMPANY, BRYAN, OHIO



Say you saw it in AERO DIGEST

(Continued from page 389)

pointing to one of the engine benches, I proceeded to demonstrate to the Admirals in the following vein: 'There are five subs doing duty in this Flight who are going to take five of the worst lickings a man ever got. There is going to be blood on everything and it begins running at six p. m.'

"Meanwhile the Admirals examine the engine I am pointing to, and nod and grin and say, 'Yes, if you please, no.' Well, I couldn't stand it very long. I pointed at the carburetor and laughed and the subs laughed and the Admirals laughed and we all laughed 'till the tears ran down our chins. In fact it was the funniest carburetor God ever made. We thought we'd die. Finally we got off our backs and continued on the route without further mishap except that I withdrew the offer of lickings and accepted a concerted offer of drinks for the week, to be paid for by the subs.

"I never got the drinks though, for when we got back to the mess the interpreter steps up to the five Admirals my subs had escorted and passes the word. 'Excellency wishes thanks to be made personal to you, Colonel' (this to each of the subs in turn), 'for very pleasant time had in Honourable company this p. m. during which airdrome are inspectioned with great pleasure and pleasant enjoyment of Honourable courtess.'

"Me?" says Hells Bells, "I got nothing. My Admiral wasn't an Admiral at all. He was a bleeding ensign who came along as aide and he didn't dare open his mouth no more than my subs oughtn't to have!"

"Which reminds me of the woman who nearly reformed the whole Squadron." (In July.)

#### AMERICA NEEDS AIRCRAFT

(Continued from page 329)

American experience with other mechanical progressions, notably the motor car, and there is no conceivable reason why the airplane should not be a comparable asset to the industrial future of the United States and the world.

I was examiner-in-chief of the Select Committee of the House appointed to inquire into our air services and also chairman of the sub-committee which prepared the report. We examined 150 or more witnesses under oath. Through this and the examination of various documents furnished us by the departments of the Government, through visiting the flying fields and factories, we proved that aviation was a very much larger industry than was generally recognized by our committee. During the eleven months devoted to, I may say modestly, a most careful scrutiny of the subject, we realized its vast importance to the future of our country.

I believe that the Government should take the lead in supporting aviation and in helping the promotion of its commercial development. I also believe that the individual states which constitute the nation must bear their just share of responsibility in supporting the efforts of the Federal Government. It will be a huge task for the Federal Government to provide a sufficient number of landing fields to support a nationwide network of commercial airlines. A united effort should be encouraged among the states by progressive-minded citizen-businessmen to coöperate in securing the essential necessities of successful flying. Without the landing field little is possible.

The Federal Government should provide navigational facilities for aviation as it does for ocean, lake and river shipping. This will cover lighthouses, meteorological information; audible signals for fog and night flying and the dissemination of information and general regulation, so as to safeguard equipment and personnel.

It is the belief of all those conversant with aeronautical affairs in this country that we are on the threshold of an enormous expansion of commercial aviation, that there is a public demand for air traffic facilities, and that this demand must be met first by adequate landing fields and navigational safeguards.

Expenditures for these purposes will need to be made only as the traffic demands. No extraordinary appropriations are immediately necessary, but a progressive program should be made similar to that which has provided us with so many excellent automobile highways.

The laws and regulations which are to govern the operation of aircraft should be of such nature that private enterprise will be encouraged to undertake its share of this important development.

Governmental action, supplemented by American business enterprise on a coöperative basis, will solve the problem of aeronautics.

With the advent of the proper statutes and the beginning of encouraging Governmental support, the industry itself will expand at an extraordinary rate.

Any municipality state or nation neglecting aeronautical development in these days does so at an economic loss; and, in the case of a nation, at the risk of its material welfare.

The airplane has just conquered the frozen arctic, traversing the North Pole. It is a great personal pleasure to me to know that the "Josephine Ford," flown by Commander Byrd was built in my Congressional District by constituents of mine, and that the engines are a product of a neighboring district.

The flight to the pole and back in safety was but another demonstration of the great possibilities of the airplane. We are at the very beginning of the airplane era and no man has vision wide enough to set a limit on its possibilities.

#### A NOD AND A WINK

(Continued from page 334)

which Casey Jones landed so daintily on Howard Wehrle's motor-cycle during the Fokker-Ford Tour.

When the Pigeon took the air, the crowd cheered and wiped dust from its eyes, and the band played on.

The next thing to take the air was a bunch of speeches by various prominent people who may have been all very well in their way, so long as they avoided the thorny ways of public speaking. The band had stopped to listen at first, but it didn't take them two minutes to rate those speeches at their true worth. Upon which they promptly struck up again. So all the speakers worked to a full brass band accompaniment. I don't know why this procedure isn't followed always. It's easier on the audience and it's better for the speaker. Personally, I prefer to speak accompanied by two brass bands and a steam calliope.

Everyone discussed the "future of air transport" and (Continued on page 392)



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(Continued from page 391)

the difficulty of selling planes. Every speech was greatly applauded, as nobody could hear them and all thought there was a contest for the best band leader.

Colonel Paul Henderson arrived too late to make a speech. This may have spoiled his whole evening. I don't know, but to me it proves that even in our infinitely sad lives, much is spared us. Surely, there is a God. He tempers the speaker's wind to the shorn lamb. And the band played on.

After the speeches there were some equally enjoyable races, C. E. Clark winning the OX5 event in a walk, and Walter Beech winning the free-for-all in not more than a trot. An old lady asked Beech if the terrific speed didn't make him dizzy. And Walter said it was either that or some of Fred Hoyt's corn or rye he had taken the night before, along with cold stewed to-matees

Hoyt did stunt flying, Haley jumped a parachute and Chief Bowhan won a dead stick landing competition. The Chief is an Osage Indian, one of the few Indians who has swapped his pony for a plane. His wife, the beautiful Princess Charlotte, is going in strong for higher culture. We entertained each other with our views on the effects of halitosis on Ibsen drama and whether or not one may acquire a taste for olives without a college education. We were in accord—perhaps because I, also, am an Indian. Not an Osage, however, I'm a full chief, and some of the time a partly full chief, in the Ohell tribe of Nova Scotia.

But we are speaking of the ceremonies at the field when I got led astray into personal biography. Please forgive me! I'm just like you. I take more interest in myself than I do in any other subject. The ceremonies delighted everyone—gave folks an excuse to stay away from church. That's a privilege in Kansas. Everyone said what a wonderful time everyone had enjoyed. I almost wish I had gone to that opening, myself. But I hadn't. I was 75 miles away, across the plains, with a charming young lady in a compé.

Dear, dear! These Western girls! Why, do you know, there were times when I actually thought I should have to get out and walk home? You see, this girl was used to the West and I wasn't. It seems the general moral uplift in Kansas has hit the movies and closed them up over Sunday. So now, instead of taking his girl to the cuddlesome obscurity of the silent drama, the Westerner steps on the gas and takes her to the more open spaces where men can still try to be men. It's amazing the number of ladies' shoes you see in the repair shops being half-soled. But I hear the number is decreasing. A girl just has to economize some place.

Well, this girl I coupéd with was economical. Her shoes were almost new. So were mine. Anyhow, they were a damn sight too tight to walk 75 miles in.

#### THE de MONGE TYPE 7.5 MONOPLANE

(Concluded from page 340)

r.p.m. and necessarily larger propeller diameter.

The structure of the wing-fuselage portion is constituted of two main transverse trusses and four longitudinals forming a rigid rectangular wooden frame. The motors, pilot and passenger are housed between these two main trusses, to which are also attached the landing gear and four wing hinges on either side.

The front part is covered with plywood and the aft part of the cockpits is covered with duralumin.

Outer panels are of standard construction. The beams are built-up, box-type with spruce capstrips and plywood webs. The ribs are also of spruce and plywood

The motors are 4-cylinder automobile type Bugatti's of 1500 cubic centimeters displacement. They drive Lumiere propellers 1.3 m. diameter. The normal r.p.m. are 3200 and the maximum b.h.p. of each engine is 45 h.p. Gas tanks are made of duralumin. Oil is contained in the crank case.

General data: Span, 37 ft. 9 in.; length, 19 ft. 7½ in.; height, 4 ft. 10¾ in.; wing area, 226 sq. ft.; wheel tread, 5 ft. 5½ in.; maximum chord, 9 ft. 10 in.; maximum thickness, 2 ft. 2 in.; aspect ratio, 6:3. Weight empty, 1070 lbs.; weight of crew (1 pilot, 1 passenger), 330 lbs.; weight of fuel for 3 hours' flight at maximum power, 145 lbs.; gross flying weight, 1545 lbs.; design load factor, 12; weight per h.p., 17.2 lbs.; weight per sq. ft., 6.85 lbs.

Calculated performance: service ceiling with 2 motors, 19700 ft.; service ceiling with 1 motor stopped, 8200 ft. Maximum speed, 111.5 m.p.h.; cruising speed, 93 m.p.h.; landing speed, 34.2 m.p.h. Normal range, 373 miles; range with auxiliary gas tanks, 1243 miles.

#### GROWTH OF THE DOUGLAS COMPANY

(Concluded from page 346)

several confidential military projects for the Army and Navy Air Services.

Six Douglas mail planes recently delivered to the Western Air Express, Inc., are now in daily service on the air mail line between Los Angeles and Salt Lake

The maintaining of deliveries on contract dates has been one of the outstanding factors contributing to the growth and success of the company. In all Air Service and commercial contracts, deliveries have been completed in accordance with contract requirements and in several instances deliveries were made in advance of the contract requirements.

Clover Field at Santa Monica, California, was recently purchased by The Douglas Company and the City of Santa Monica for the sum of \$800,000. The field contains 173 acres and 67 acres of this will be used for the flying field, Army Air Service hangars and civilian hangars. The remainder will be used as a municipal golf course. Clover Field is well-known throughout the Air Service as it was from this field that the 'Round the World Flight was started and completed.

During the past few years it has been leased from its owners to the Air Service for a nominal rental, but as the ground increased in value, due to its close proximity to the rapidily growing residential district, the owners could not afford to continue leasing this valuable acreage for the low rental. The Chamber of Commerce, in conjunction with The Douglas Company, negotiated with the owners to purchase it for a municipal airport and for the new location of The Douglas Company.

The Douglas Company's lease on their present factory expires shortly and inasmuch as it will be necessary to locate in larger quarters, due to their rapidly expanding business, it was imperative that the new location should have sufficient acreage to permit the flight

testing of their planes.

The Douglas Company agreed to purchase seven and one-half acres of Clover Field for the erection of their factory and the City of Santa Monica proposed to purchase the remainder of the acreage for use as a municipal airport.

This proposal was drawn up in the form of a bond issue to provide funds for the purchase of the city's share. This bond issue was approved and work on improving the field and laying out the golf course will be started soon.

The Douglas Company is preparing to start the construction of a more modern up-to-date airplane factory on its acreage on Clover Field so as to be able to occupy it when the lease on their present site expires.

#### THE FLIGHTS OVER THE POLE

(Continued from page 327)

the Pole at 1 a. m., descended and dropped the three flags of the expedition-Norwegian, American and Italian. These were affixed to spiked standards which pierced the ice and supported the flags in an upright position.

They then traversed the heart of the vast unexplored area between the Pole and Alaska. Forty-six hours after leaving Kings Bay, Point Barrow was sighted. After Point Barrow, fog, snow and ice hid the contours of the land, making progress slow and uncertain. As they flew higher to avoid the fog, ice began to freeze on

(Concluded on page 394)



During his transatlantic flight on the "Los Angeles" Dr. Eckener (in uniform) had before him at all times a

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the ship, adding to their difficulties. After they obtained the position line pointing to Bering Strait and were no longer in danger of colliding with the high arctic mountains, they came down below the fog and proceeded with greater ease. An attempt was made to reach Nome but fog and wind made it advisable for them to land quickly and they made their descent at the little village

Although slightly damaged by a rough landing, the airship worked wonderfully with a normal speed of 57 m.p.h. and landed with fuel enough to have proceeded 750 miles more. This is the longest successful nonstop flight for non-rigid dirigibles.

Quite as notable as the mechanical triumphs of the "Norge" and the "Josephine Ford" was the functioning of the navigating instruments. The "Norge" found her way to the Pole largely by use of her radio directionfinder and a sun compass evolved for the Arctic by Albert H. Bumstead, chief cartographer of the National Geographic Society—a simple sundial marked for 24 hours, adjustable so that the sun's shadow constantly marks the course.

Byrd used the Bumstead sun compass, the Byrd bubble sextant (his own invention) and the drift indicator in conjunction with the Littlehales method for finding geographical position in the polar regions.

At Teller, the "Norge" was deflated and dismantled for shipment back to Italy where it will be restored and rebuilt. The "Josephine Ford" will be brought to America on the "Chantier" this month.

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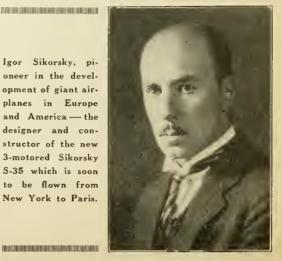
(Concluded from page 331)

without difficulty during flight to compensate for any disturbance of the fore-and-aft balance of the ship, or for varying the attitude of the ship for slow landing.

The landing gear is of the divided axle type. It is made entirely of steel, with parts bolted together. No welding is used on any part. The wheel tread is exceptionally wide, 18 ft. 4 in.

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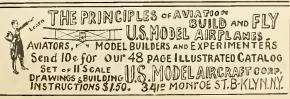


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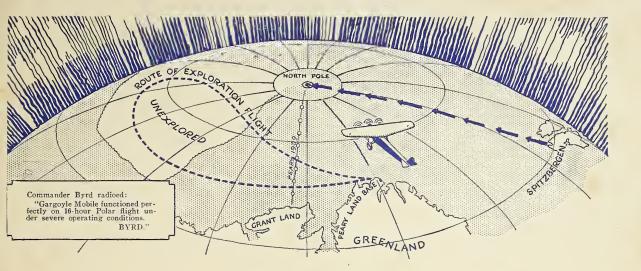
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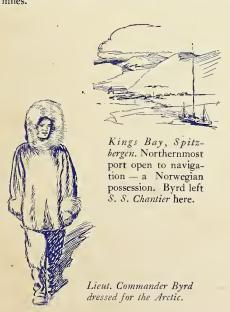
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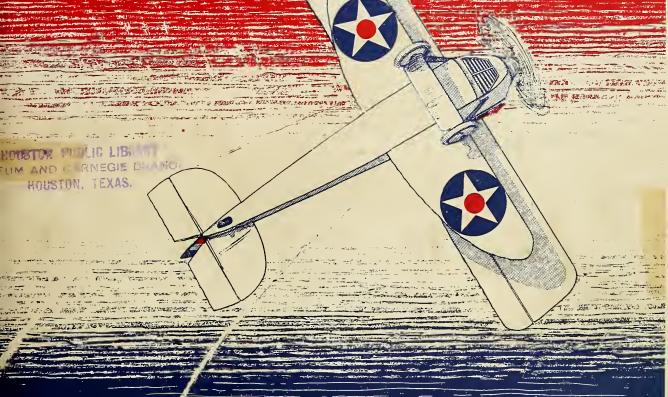
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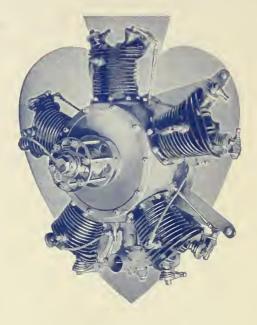




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Vol. 9 No. 1

JULY, 1926

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Here, there and everywhere, along the sea-lapped border of our country are bits such as that shown in this beautiful picture—at once our glory and our peril. Such regions, invulnerable to the old warfare because their remoteness made them unavailable to landing parties, now are the very points where air attack will seek entrance to our interior.



T must be the policy of every Government to guarantee to its people a reasonable degree of security, prosperity and happiness.

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In a war between two first-class industrial nations, modern scientific developments have increased the defensive power of Armies on the ground to such an extent that one

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In international war, surface Navies are practically useless. The Submarine is now the main instrument of maritime warfare.

Air Power has taken its place as the dominant instrument in international war. It can fly straight through the air to the vital centers of the opposing state, destroy them and render the country losing control of the air in a defenseless state.

The relative value of the principal active elements of Na-

# By Colonel William Mitchell

Former Assistant Chief of the Army Air Service



tional Defense, on a basis of 100, is about 20 for a Navy, 30 for an Army and 50 for Air Power, or the combined value of both a Navy and an Army.

Today a country weak in Air Power courts disaster.

Today a country without a single department of National Defense to coördinate its system of protection cannot survive in a modern war.

The United States is the only civilized country which has not coördinated its National Defense elements under a single direction, and which still trusts to an Army and a Navy alone to protect it.

The United States knowing about the capacity of modern Air Forces and being so immune to attack over the land and the water, pays little attention to its National Defense. It still listens to the advice of its regular Army and Navy as to what National Defense should be. Never has worse advice been given by any Departments of the Government on broad national questions than that which has been given since the World War by the Army and Navy to our

people and Congress. They not only are attempting to adhere to a system obsolete even in the time of our Civil War, but they have directly and deliberately misrepresented facts to the Congress and the people as to what modern National Defense is.

The valor of ignorance pervades the bureaus of the Army and Navy in Washington, from top to bottom. Not only are huge sums of money being spent uselessly, but the people are led into a false feeling that something is being done to protect them; whereas, practically nothing is.

We will not have National Defense in this country until this matter is taken out of the hands of the regular Army

(Concluded on page 69)

# AIR-HOT AND OTHERWISE

OMETIMES when I write the name of the Wright Brothers right, I wonder if I have any right to do it. Heaven knows I would not wrong the Wrights but it also is a fact that I cannot right their wrongs.

Wrongs? Many and then some. For the name of the Wright brothers stands for progress and Ameri-

can aviation but as far as the Senate is concerned, it is coming to mean not flying but often a word that rhymes with it and begins with "1" without the prior "f."

The Chinese, who are unusually intelligent people, when they sent over a group of students to study anti-aircraft methods in America, they knew where this art best could be learned and told them to attend the sessions of the Army General Staff and the Senate Military Committee. No such skill as that of these great forces against all matters aeronautical has developed elsewhere on this earth.

I find myself distressed because in this National Defense Number of the Aero Digest I am constrained thus to throw another brick or two at the Army General Staff and the Senate Military Committee. This may be, however, the year's most appropriate issue for the purpose; perhaps heaving bricks at the General Staff and some Senatorial notables may be the first steps necessary to our National Defense. Perhaps a well-devised campaign, full of tactics, strategy, trajectories and high explosives (as high as possible) against these two institutions would fit the country for protecting itself against outside foeman by relieving it of its most notable inside encumbrances.

Self-preservation is the first law of nature, but the Senatorial committee and the General Staff see to it that it does not count among the laws of the United States.

Defense, to their minds, should be only of soft places and nice incomes for themselves and associates.

Senators are very tender of big epaulettes and handsome hats on Admirals, et al. It helps keep peace in family circles if our intellectually gigantic legislators can get highplaced official gentlemen to their wives' receptions shining like circus chariots, brilliant with gold lace and brass buttons, and jingling like an Eastern slave girl in her shackles. They are most impressive social figures when decorated with tin swords, sixteen-inch guns and other weapons which they steadily wear in Washington and pray Heaven they may not ever have to wear on any other front.

Senators often get out of touch with their constituents that way. Fascinated by the gorgeous permanence of the staff officers and those whom these can order about sternly, they forget that while nothing but the retirement age or a court-martial can get any of these stuffed uniforms out of the picture the national slate can easily be cleansed of a Senator or two by a few mere votes—cast back at home, far from Washington, and not by Army or by Naval friends. If we gave gilt bonnets and striped pants to the officials of the Post Office and Commerce Departments, they might get more out of the Senate.

But the air force hasn't any special pull because it is split up like a mince pie, a piece apiece for each of the two departments. But if Washington believes the people are not watching and don't care, it is mistaken. The fact is that the American public is like a kid who has been promised by his dad a great and glorious Fourth of July, but

Wanted—An Alienist: Apply Senate Military Committee

New Laws Would Make the Air Mail Pay

#### By Frank A. Tichenor

only gets one pack of fire-crackers and a sore thumb. Still there's a difference. Such a kid has no redress, while it is bad for Senators if their constituents get that disappointed feeling.

On the second of June the Senate passed House Bill 10827, known as the Army Aircraft Bill. One pleasing feature of this Bill, as it was

originally drafted, was its provision that only officers able to meet certain definite tests should draw flying pay. Fair enough. In commercial and professional life, outside the Government's activities, pay for particular work goes only to those qualified to do that work. A real definition, had one been incorporated in the legislation, would have required that those to draw the flying pay should be the flyers, with none others eligible. Under such a requirement arm-chair zoomers would not count.

The Senate Committee on Military Affairs insisted on the elimination of this provision in the Army Aircraft Bill's final form, although June the fifth, the Senate as a whole wrote a definition as to what a "flying officer" should be into House Bill 9960, known as the Naval Aircraft Bill before passing it.

Interesting episodes. The provision was originally in one Bill but was cut out; was originally out of one Bill and forthwith was inserted.

The Senate Military Committee which eliminated the provision from the Army Bill was very plainly under General Staff domination and the General Staff desires above all things to keep its Army pets so situated that under a regime of hand-painted regulations they can draw flying pay whether or not they can or do actually fly. The object of the General Staff in this instance is not National but Bureau Defense, not efficiency in national expenditure but financial help for favorites.

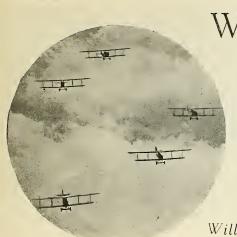
The same Senate which approved committee action of one kind by passage of one bill, three days previously had approved exactly the reverse. All air legislation seems to hopelessly intoxicate our Senate. It makes the members mentally woozy; apparently they cannot retain their mental equilibrium even when merely talking about life upon the upper levels. Having declared a certain policy to be a national peril if practiced in one branch of our defense they steadfastly approve it as a virtue if practiced by another.

The country will not see that reasoning clearly.

It will assume that anything which will be an error in the case of John must be equally an error in the case of Jim

It's an interesting situation, apparently pathological rather than legislative. What the Senate seems to need is alienists. As things are one understands why certain statues ornamental of the National Capital are threatening to leave their pedestals and search out new positions on or near the less brain-storm-swept façade of some one of America's well populated funny-houses. A self-respecting statue can stand just so much mental shock; if more than that assails it gets Senatorial tremens and sees pink rabbits turning somersaults in bolshevik pajamas among fat skeletons playing golf with square balls.

Now if one did not understand from sad experience how (Continued on page 67)



WEATHER

and

# National Defense

By Rear Admiral William A. Moffett, U.S.N Chief of the Bureau of Aeronautics



numerical strength of the agencies of the National Defense by treaties and appropriations, have caused those responsible for our security to investigate new fields and to concentrate along varied and different lines of development to produce the maximum military and naval strength possible with the available material and personnel. In such strength lies peace.

Restricting the number of our battleships to 18 has given marked impetus to the study of the tactical employment of the Fleet's auxiliary forces, and the intensive training, and education of the Navy's man power. By training, inven-

tions, experimental development, and coordinated effort, the Navy intends that the Fleet will be capable of the full play of its power in the meeting of its responsibilities.

The advent of aviation as an arm of the National Defense Forces has introduced new problems in warfare and a more intensive study of old ones. In the latter class we find that common subject, weather.

The establishment of most of the political boundaries of the countries of the world can be directly traced to weather, but in spite of that fact it has never been accorded the place it deserves as a factor in the National

Defense Familiarity with visible evidences of it may account in part for this disregard and failure to appreciate its potential significance. History is made so rapidly that we are prone to forget such momentus occurrences as the Russian Campaign of Napoleon; the Allied attempt to force the Dardanelles, and the Battle of Jutland. Rain mastered the 450,000 troops of Napoleon and so changed the map of Europe; gales saved Constantinople and thereby protracted the World War; and fog permitted the German High Seas Fleet to elude the Grand Fleet of Britain. The scientific execution of future wars should eliminate the possibility

of such catastrophes.

Strategists and tacticians in the past have

God for favorable weather. It was not until aviation entered the scheme of National Defense that the science of aerography, that youngest of the three sciences in geophysics, was seriously utilized in the planning and execution of campaigns.

The success of naval operations under, on the surface, or over the sea, is strongly influenced by atmospheric visibility, fog, gales, condition of the sea, height of the clouds, and other meteorological conditions. Notwithstanding increasing seaworthiness and airworthiness of surface vessels and aircraft, these weather conditions will probably always constitute an important factor in naval warfare. To the naval commander the tactical value

of meteorological knowledge is of even greater importance in modern naval warfare than its value as security against damage by storm.

In warfare, next to being able to control the weather, it is essential to know enough concerning it to take advantage of weather conditions. In the Navy, we are endeavoring to do both. Should we be so unfortunate as to be drawn into another war we intend that the weather will fight for us. It is an all-powerful ally. I can bear this statement out by figures upon the measurements of certain of its forces which cannot be disregarded average thunder storm dissipates one million horse power

of electrical energy; and it has been estimated that six million tons of rain fell in one storm in the southern part of England

> The major problem that confronts us is how to take advantage of the power-

ful forces of nature in the grand plan of defense. First, it becomes necessary that this comparatively new physical science be advanced as rapidly as possible, that empirical methods of forecasting be replaced by aerodynamics and mathematics. that an aerological survey be made of the theatre of any future naval or military operation; and that trained aerologists take their proper places in the organization of the military and naval forces. Our defense plans are modified as our

knowledge of local weather conditions is augmapped their military and naval campaigns and prayed to mented. For example, the low .. (Concluded on page 74)



Those who cannot excuse the writer for his subject, may find some

interest in the picture of bombing from the flyer's viewpoint.

By Henry B. Inglis

Chief, Armament Section, McCook Field
Phot, graphs, Courtesy of the U. S. Army Air Service

SCIENCE has utilized the airplane to induce precipitation from a cloud, by throwing electrified sand about, though contagion into a general rainfall did not spread.

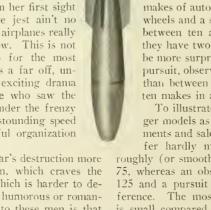
The airplane also inspired science to clear a space in a London fog but the great gloom did not dissipate beyond a local area.

Such attempts, like the more obvious value of dusting orchards, forest fire patrol and air mail, are accepted as

forerunners of the airplane's commercial future which, like all new modes of transportation, is slow in coming. Yet Americans who pride themselves with the greatest imagination on earth, possess a paradoxical trait. First to see an airplane fly, they are last to believe their own eyes, still looking at an airplane as the farmer's wife who upon her first sight of the circus camel, exclaimed "there jest ain't no sech animal." They hardly know how airplanes really live, whether they lay eggs or just grow. This is not to criticize the practical people who for the most part over here had to view the war as a far off, unreal thing of romance, more like an exciting drama than the vivid reality it was to those who saw the airplane develop like all other arms, under the frenzy of war's immediate necessities, with astounding speed for diverse uses, and into a wonderful organization which is scarcely realized on this side.

Those men who knew it best, hate war's destruction more earnestly than the younger generation, which craves the romance, not knowing the ugly trail which is harder to depict and easier to forget than agreeable, humorous or romantic episodes. The discouraging thing to these men is that

their countrymen seem blissfully unaware that war attacks the least prepared who have closed their eyes with peaceful moral-Enemies are unmindful of the fact that both have outlawed war by unanimous national votes. To prevent another war or to stop it quickly is the hope of preparedness until civilization earns its name, and there is no thought of national boundary for a military nucleus kept up to date in advance is a surer premium on national life insurance than glycerine tears or righteous abhorrence.





Deck of the Indiana after an air bomb hit.

The pilot escorting his ground friends "down the line" of say twenty types of airplanes gets a painful sort of amusement at the common remark, "they all look about alike to me except that one is bigger than the other." The visiting dignitary's remark upon being pointed out, "Now there is the latest type of mono-

plane," "Oh, yes, I see but where is the other wing," is typical of the superficial information most Americans still exhibit regarding flight, or their own Air Service. An auto salesman would make easier sales if the public had no keener perception of what was under the hood or behind the paint—thinking ten makes of automobiles look alike because they have four wheels and a steering gear—than it has discrimination between ten airplanes—which all look alike because they have two wings and a pair of wheels. He would be more surprised to know that the difference between pursuit, observation and bombing types are far greater than between the truck and the coupé, or comparing ten makes in any one class.

To illustrate, you may compare ten modern passenger models as wide apart as possible in price, appointments and sales phraseology, and their speeds will differ hardly more than fifteen miles per hour, say

roughly (or smoothly as the case may be) between 60 and 75, whereas an observation airplane may be designed for 125 and a pursuit type for 165, a 40-mile per hour difference. The most advertised pick-up difference in cars is small compared to the difference, which may be called

analogous, between one airplane that can get off the ground in a 100 ft. run and another which requires 1000 ft. in a small field. A light auto weighing about a ton may be said to be the extreme of a 5-ton truck, yet a big bomber may weigh 10 tons as against 1½ for a pursuit type.

There are many further characteristics of airplane performance of which our romantic Americans are blissfully ignorant yet of vital importance to the flyer, according to the widely different missions beyond merely "soaring around overhead." For

many embar-

rassing particu-

lars before

he chooses his pursuit type.

There is not the

least chance of selling his choice

to an observa-

tion crew, or

example, of "these two airplanes, both with two wings and a pair of wheels," the one carries 1,000 pounds of useful load to 23,000 feet maximum ceiling and the other 8,000 pounds to 19,000 ft. The one goes 170 miles per hour near the ground and the other 130 miles per hour. The one climbs 1200 ft. per minute and the other 600 ft. The one has a cruising radius of 200 miles and back without landing (400 miles range) while the other has a range of 1,300 miles, a rather important

ASTREA

ORLANDO

SEG YOS

ARROGANT

380 YOS.

B

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Diagram showing the average maneuverability of battleships. The probability is now 59 hits out of 100, instead of a doubtful 3 with wartime instruments.

matter where there are no gas stations in the clouds, you see. Why is this you ask? Well, the differences are in the engines, one 400 or 600 h.p. engine or two or three, supercharger or not, in the propellers, the wing area. aspect ratio, wing loading per square foot, power loading, wing section (there are some 5,000 different sections), fineness ratio, crew, one pilot or perhaps five or six men, equipment necessary for the mission of its type, two guns or seven, 800 rounds of ammunition or 4,000, no bombs or from 4 to 20, 100-pounders or six 600-pounders, with calculating instruments and an instrument board which looks more like a power house central than an auto dash; cameras, radio, oxygen, parachute flares and many smaller accessories commonly but unofficially called "gadgets"differences which would defy a salesman to approach a flyer with any such generalization as the following which may be recognized as applicable to almost any of thirty modern makes of autos: "you will be delighted with the ease on the level or grade, with the quick pick-up in traffic, steady speed, graceful gliding and luxurious ease at small cost.

We will not argue that a war plane is a thing of luxurious ease at small cost, but the prospective flyer will demand

vice versa, and the bombing crew will have none of either, for these three are as far apart in their requirements as a golfer, a football player and a polo expert; and it is not all temperament either, for if the enemy has the advantage in his same class of airplane. of even miles per hour speed, of faster climb, higher ceiling, tighter

maneuverability, better vision, quicker gun fire, etc., it is often a difference between life and death.

In the accompanying sketch, the ship's curves illustrate neither the shortest possible turns which fast cruisers or destroyers can make, nor the largest, but they are fairly representative of average maneuverability. It should be noted that the distance AB which the ship travels while the bomb is falling, is several ship lengths, while the deviation Bc or Bd from the calculated point B, which the ship can accomplish by changing its speed or direction in that time, is, contrary to common assumption, a comparatively small distance. The instrument calculates the unknown point B with exactly the same accuracy as on a stationary target, and the only error involved in bombing a moving target is the possible deviation from that point. A single bomber may partially correct for such a deviation whenever the ship's wake gives him a clue as to which direction the ship is turning, while a flight of three bombers can, without making any correction at all, drop a formation of say nine bombs so as to cover the entire area of possible deviation with a very high probability that one or two will find

We believe the following questions are in the minds of







The Osfriesland under aerial bomb fire.

Bombing the Frankfort. The Osfriesland starting on her final plunge.

many:

1. Why are statements on bombing accuracy and effectiveness so widely at odds?

2. What is the measure of accuracy? What constitutes "a hit" and what is an effective percentage?

3. Is a hit a matter of good eyesight, skill, luck, and how do we know with any certainty where a bomb will land?

4. Is "probability" a mere guess, or does it have any definite meaning in predicting what results will be?

5. What are the causes of errors and to what degree are errors controllable?

6. Does not the wind "blow the bomb off its course"?

7. Is not the bombing of moving things, as a battleship maneuvering under full power with anti-aircraft protection, fraught with so many difficulties as to make a hit

highly improb-

able?

8. What is the truth about antiaircraft fire? Can the bomber operate in the face of it, and at what altitudes?

To sense these problems we must first go up in the airplane at the risk of spoiling some of our romantic illusions.

After hoisting six 600-lb. bombs on to racks through a hole in the bottom of the fuselage, the airplane, with five hours of gasoline, takes off the field in a considerable run, and very quickly is a few hundred feet above the ground where the sky line changes into a flat map. The pilot, in spite of his advantage of an extraordinary view of everything

within a 75-mile radius, innumerable towns, roads, rivers, forests, fields, etc., feels anything but a "superman," sitting up there in his loneliness, for after twenty minutes back of his roaring propeller he is almost stone deaf, cold and numb. Passing nothing to break the monotony except perhaps the occasional appearance of small groups of black or white shrapnel in the distance above or below him, after one hour's patrol he is probably battling against a painfully intense inclination to fall asleep. The one thought which holds him in a semi-conscious state of coma is a subconscious dread that the steady roaring, which keeps him deaf, may be interrupted by the alarming sputter or popping of his friend engine to jolt him rudely into alert scanning of the patch quilt of checkered fields, constituting the map which creeps back under him at

a snail's pace, to decide quickly upon a field which looks free from the snares of swamps, ditch or bordering trees, telegraph lines or fences. These may not be easily discernible for long minutes of gliding down to lower heights. If he is over the line, especially if above a sea of clouds, and does not know his location very closely, then there is the dread of some vaguely mysterious end to his glide, perhaps imprisonment for the duration of the war. But he is busy figuring out whether the six black specks ahead of him are friend or enemy planes, or shrapnel. The spots enlarge as he approaches into balls of smoke, and he stares around to find the airplane they the shooting at, possibly at him.

Still less a thing of ethereal beauty is the bomber and his thoughts on the floor over the opening in the narrow confines of his cockpit, as he squirms his stiffened joints

awkwardly within the thick flying suit, cursing the powers who put all these levers. switches, boxes, gadgets to stick into him at every move. Removing his goggles, with watery eves he looks down through his telescope to hold it on to the objective which is creeping back toward him with the map. He measures the angle and waits to pull the handle and release the cargo of bombs for their downward plunge.

Whether it be a hit or a miss depends upon the care and steady vision he is able to exercise on the manipulation of this instrument during a critical half-minute, and, upon the pilot's response to his

por all sw gas int mothis was loo that sect to will be will be

A group of winners of the 1926 machine gun and bombing matches, Langley Field, Va. Lieut. E. E. Harmon, winner of the bombing match (center). Reading clockwise around the circle: (Top) Lieuts. L. M. Merrick. H. S. Vanderberg. S. C. King, L. H. Sanderson, W. T. Larsen, H. L. George, E. E. Partridge and C. E. Shankle.

signals of direction and steadiness with which the pilot has maintained direction, levels and speed. It depends half upon the precision of the instrument itself in calculating the ground speed, the windage and bomb's lag which go into the setting of the exact angle which indicates the one and only correct instant in that approach to release the bomb. Unlike ground fire, there is no chance to make a correction if the first shot is too far right, left, over or short, but he must turn around and go through the whole procedure again.

The bomb falls 2,000 feet in 11 seconds and it is not impossible for the bomber to visualize the 1,600 feet ahead where the bomb will strike from a 100 mile per hour airplane. From 20 000 feet, however, the bomb takes 35 seconds to fall, and while falling it also travels ahead almost

(Continued on page 56)



N order correctly to estimate our needs for national defense, we must first take into our accounting the revolutionary changes that have been wrought in armaments and in methods of warfare by invention and the exigencies of the World War.

Terribly effective and horribly cruel poisonous gases have been introduced as weapons of war, while the airplane has conquered the sky, and now holds a place as high as is the sky above all other engines of war.

The airplane is today, and is destined to be for all time to come, the main arm of attack and defense. Airplanes have already been developed which are capable of making transatlantic flights, and bombing planes are today capable of carrying high explosive bombs of a size and destructiveness far beyond our pre-war dreaming; while huge airplanes laden with poisonous chemicals, liquid and gaseous,

can now rain down death from the sky upon the population of cities and towns.

The airplane can over-fly all barriers, and with a speed outstripping the wind can with the greatest ease and facility reach and attack any inland city or town. It puts the entire population on the fighting front. Every home is on the firing line, and out of the night-sky marauders may descend for pillage, rapine and murder. The inhabitants of any city or town may wake out of pleasant dreams to find themselves gasping in an atmosphere of poisonous gases showered upon the houses and streets by a passing fleet of airplanes.

It makes no difference whether or not we consider that the airplane relegates armies and navies and coast fortifications to a subordinate place, actually making them mere auxiliaries, or whether we consider the airplane as an auxiliary of the sea-fleet and of the army. It makes no difference whether the airplane be given an independent depart-

#### By Hudson Maxim



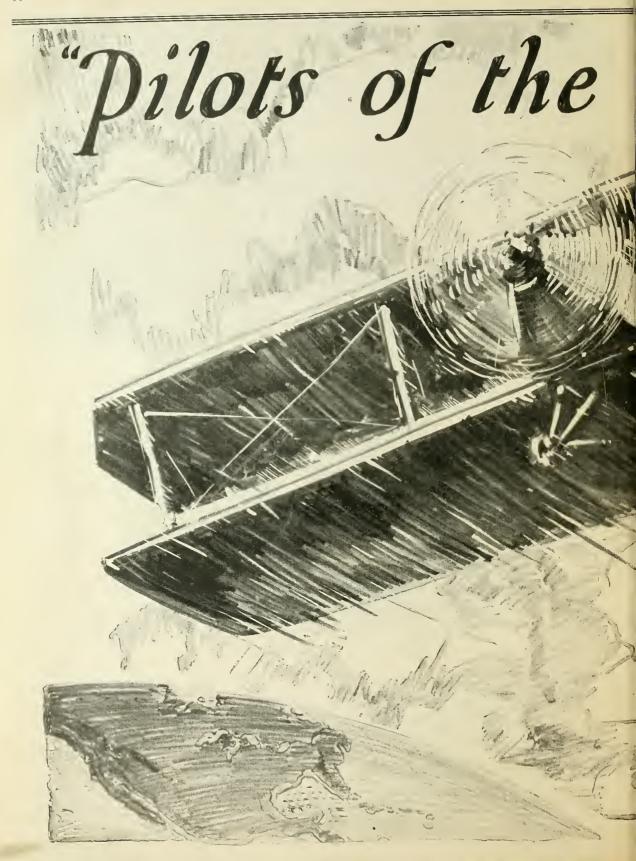
ment, like that of the army and navy, or remain, as I have said, an auxiliary of both. Its potentiality as a weapon of war must be recognized and accurately measured, and included in our preparations for national defense for what it is worth; or we shall find ourselves at the same disadvantage in the face of an enemy who does rightly estimate the airplane and arm himself accordingly, as did the British army, provided merely with Kitchener's grape and canister, in face of the thousands of machine guns of the Germans and the stupendous high-explosive German shell bombs that plunged down deep into the earth, blowing trenches and men into the

Foresight, together with the courage of initiative, is the first requisite to national preparedness.

What we must have, and there should be no delay in providing it, is a monster fleet of battle-planes and bombing planes, and

swift and high-flying scouting planes, in order to safeguard our country and our homes from attack, and in order to forefend the country, by attacking and destroying any enemy airplane bases so situated as to menace our security. Also, we should have a standing army of sufficient size to form the nucleus of an immediate respectable fighting force, while civilian military training should be encouraged and extended.

All our citizenry should be made familiar with the use of firearms. The stupid laws that have been passed by fanatical sentimentalists to disarm the householder and the shop-keeper, and make his home and his shop defenseless and at the mercy of thugs and gummen, should be repealed, and instead laws should be passed to subsidize and encourage in every way the arming of the people, so that bandits and thugs who may thereafter invade a bank, a factory, a store or a home, will find themselves looking into muzzles of guns with persons behind the guns trained to shoot.



"And I saw the heavens filled with commerce-Argosies of magic sails; Pilots of the Purple Twilight Dropping down with costly bales."

-Tennyson

Century-old dreams of the commercial conquest of the air are being wonderfully realized!

Commercial aviation is swiftly gaining the recognition of hard-headed business men as a practical method of transportation.

Nothing can do more at this time to speed the fullest attainment of these possibilities than the second annual Commercial Airplane Reliability Tour for the Edsel B. Ford Trophy.

Millions will see these planes. Thousands will have an opportunity to examine them. More than a score great Mid-Western cities will be visited, with a day's stop-over in each. Wide publicity will assure national attention. \$20,000 in prizes, plus lap and special prizes offered by cities visited, await the winners.

As a means of encouraging commercial aviation, as a test of reliability and a comparison of engineering principles, as encouragement for the development of landing fields and air routes, and as a rich reward for progress made in commercial plane construction, this tour stands alone.

Planes will hop off from Detroit on August 7, 1926. The tour is sanctioned by the National Aeronautical Association. Pilots' expenses will be paid and free gas and oil furnished. And the eyes of the world will be on the contestants!

Entries close at the headquarters of the Commercial Airplane Reliability Tour, Detroit Board of Commerce, Detroit, Michigan, July 21. Planes must be at Ford Airport not later than sundown on August 4.

#### Commercial Airplane Reliability Tour of 1926

For the Edsel B. Ford Trophy

Start and Finish at Detroit August 7 to 21, 1926



# THE FAIRCHILD MONOPLANE

HE new folding-wing cabin monoplane successfully dem-Roosevelt Field, Long Island, last

month, was designed by the Fairchild Manufacturing Corporation primarily for photographic flying. The body is arranged to accommodate the Fairchild Fully Automatic military type aerial mapping camera as well as the military type four-lens camera. This is the first airplane to be designed for such a purpose and it will soon demonstrate its usefulness in mapping and aerial survey missions.

Completely enclosed in the large, comfortable, leatherupholstered cabin the pilot and two passengers have excellent visibility, a most important consideration where it is necessary to closely observe land marks and definite sections of the territory in taking survey photographs. The camera operator can carry on his work without discomfort from wind and cold even in winter months and at high altitudes where temperatures of 20 degrees below zero are not uncommon

The unobstructed vision of the pilot assists in accurate handling of the plane in taking-off, landing and in guiding his ship over definite pathways as required by the photographic work being carried on.

Many new features are incorporated in the design of this monoplane which represents many months of work by members of the Fairchild organizations.

The folding wings are the most apparent innovation. In a few minutes the wings can be folded back against the body, reducing the width from 44 feet to 121/2 feet. This permits the plane to be towed through streets from flying fields without difficulty. The required storage space is also reduced, and the machine can be accommodated in a small hangar.

Flaps along the entire trailing edge are manipulated to reduce the lift and slow up the machine in landing. These flaps, which have the effect of modifying the wing section, make it possible to climb rapidly, take off quickly and attain

a high speed in horizontal flight.

Differential aileron controls are provided. Controls are operated entirely by push and pull rods instead of cables. The horizontal stabilizer is adjustable during flight.

The landing gear is of the divided axle type which permits landing upon and taking off from fields having tall grass without danger of nosing over. The streamlining of the landing gear reduces the head resistance.

The wings are supported by a pair of V-shaped steel tube struts at onstrated in tests flights at George F. McLaughlin of V-shaped steel tube struts at either side of the body. Although not shown on the accompanying pho-

tographs, streamlined fairing strips will be attached to the struts, further reducing the resistance and adding to the

JULY, 1926

stiffness of the trussing system.

At the present time the plane is equipped with a Curtiss OX-5 engine delivering 90 h. p. although the design has provided for the installation of any motor up to 200 h. p. It is intended to replace the OX-5 with the new 150 h. p. Caminez engine which is now being produced by the Fairchild Company. This novel 4-cylinder X-shaped air-cooled engine will greatly improve the performance of the machine. The "Cam" engine was successfully demonstrated recently by test flights in an Avro plane flown by Capt. Depew. The combination of these two new products will result in an airplane of high efficiency and easy maintainance.

With the OX-5 engine a speed of 90 m. p. h. was attained carrying 23 gallons of gasoline, 4 gallons of oil and 125 pounds of sand ballast. At an altitude of about 3,000 feet it was put through a series of maneuvers to test the effectiveness of its controls. At an altitude of about 400 feet the pilot released the controls and demonstrated that the ship would continue in perfect balance without guidance.

General specifications of the Fairchild monoplane: Overall length ......30 feet Area of main wings (with ailerons and flaps)...274 sq. ft. 

The plane was designed and manufactured at Farmingdale, Long Island. The experimental and research work

was conducted by Professor A. Klemin, who is in charge of the Guggenheim School of Aeronautics, New York University. Com plete wind tunnel tests were made to determine the stability, lift and control, etc. Professor Klemin also made the stress analyses and computations upon which the Fairchild engineers based their designs.

On its first test flight the plane was flown by Captain Richard H. Depew, Jr.



The Fairchild cabin monoplane with wings folded and extended.



Official photograph, U. S. Army Air Service.

AR is a hateful thing; but it develops and brings to light manhood; it makes and

it proves men; it regenerates men made selfish, grasping and individualists by peace. Never under other conditions do men so show as men. This is why we always know and honor those fallen in the service of our country; their character, their spirit, their manhood, strength and sacrifice. War made them; war showed them; war developed their spirit.

What was that spirit? Well may we seek to know and forever hold on to that spirit; for, losing it, we shall be lost.

On her far eastern border where France touches Germany, I woke one morning in the dark days of the war to look out and behold a brilliant sun striking a mighty lion hewn in the solid stone of a mountain side, a lion in his majesty half rising from his sleep to take angry and indignant note of an on-coming enemy. In

that lion, in his attitude and look of aroused intentness and determination, the sculptor, the same that gave our land its Statue of Liberty, had prophetically put the spirit of not only the Americans who afterwards came there to fight, but the spirit of the fallen in the Revolution, Rebellion, Spanish-American and World War. They, like the Lion of Belfort, rose to meet the encroacher. War and fighting are hateful things; but when men for any reason, whether cowardice or luxury, tender-heartedness or even religion, lose their readiness to fight for theirs, they lose also their liberties and, when liberty is lost, life is not worth living.

Were those men who fell for our country here today, they, with their living comrades of the war, would be protesting against that governmental parsimony—it cannot be

By
Major General R. L. Bullard, U. S. A., Rtd.
President, National Security League



dignified by the name of economy—which is surely starving our young scheme of national defense in the

midst of almost unprecedented national abundance and great private spending. They would be protesting the unfairness of any comparison of the present greater cost over the lesser pre-war cost of our army and navy, because the war showed the pre-war army next to nothing, the pre-war navy inadequate, and the pre-war air force not worth mentioning. We would have been swamped without the British and French armies and air forces between us and the enemy and, especially, without the protectorate which in effect the British navy put over us while we were preparing.

In the next war, which will be fought in the air as much as, or, perhaps more than on land and sea as heretofore, are we to be as defenseless and unprepared as in the last?

Are our aviators, soldiers and sailors to go forth to protect us without

benefit of proper training and equipment?

In answer to the objection that this training is not of value in general, I wish to point out that military training and military trained men have:

Given us about 80 per cent of all that we possess—the 13 Colonies, the West, Texas, the South, the Pacific Coast, Porto Rico, and the Philippines.

Given us our free government and independence in the Revolution.

Given the world its liberty in the World War.

In all our history up to 25 years ago, given protection to settlers against the Indians.

In the early history of our country, explored unknown (Concluded on page 71)

# ATERO DIGESTO

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JULY, 1926

No. 1

#### A "BIG THREE" FOR THE AIR

NDER the Civil Aviation Bill Mr. Hoover is to be given a Second Assistant Secretary of Commerce, the Secretary of War will get a corresponding aide and the Secretary of the Navy will be similarly favored, all three new men to give particular attention to our air development.

Here the nation has a chance for the advancement of aviation in its entirety. The selection of exactly the right men for these three places, with an especial thought for their particular and trained ability and fitness each to encourage and direct that air development particularly appropriate to his one of the three departments, is a matter of unusual importance to the air interests of the country. That precisely right choice will not come unless those same air interests take the initiative, in seeing to it that it does.

Proverbs are in the Bible to fit every human exigency. "Ask and ye shall receive" is that which fits this situation. In modern American language this simmers down to the plain words: "Get Busy!"

If we don't get busy we won't get what we want; if we

don't get what we want, we, and the whole country, will be losers.

With especially air-minded men in these secretarial positions American air effort in the Army, in the Navy, in the Department of Commerce and even in the Post Office will be right, energetic and effective. It is the opportunity and the duty of those connected in every way and any way with American aeronautics to combine for the preparation of suggestions to the men in Washington who will be responsible for these appointments.

The nominations should not be controlled by party or by departmental politics; they should be made by the Air Clan and from now till they are made it should be the busi-

ness of that Clan to see to it that the wrong men are not named and that the wrong influences do not in any detail dominate.

The Hon, F. Trubee Davison has been mentioned as a probably appointee to the chair in the War Department. His business training and accomplishments would seem to qualify him for the work to be done.

Harold Emmons of Detroit at this writing seems to be the choice of Secretary Hoover as his assistant in the effort to make the air safe for the flyer. If Mr. Emmons could be persuaded to sacrifice his many personal projects and give his services to this stupendous task, he undoubtedly would be the right man for the job.

None of the names so far mentioned for the Navy Air Secretaryship, that of Commander Byrd excepted, seems worthy of much consideration. It is very much questioned if Byrd could be induced at this time to accept—there are still some unexplored territories to be conquered by air.

To name for the job one of the individuals who is seeking this appointment would be as criminal as to give a demented child a loaded gun to play with.

Air men keep your ears to the ground; listen intently, and should any of the unseen forces which ofttimes control such appointments make a wrong move, protest, and make the protest so loud that everyone in the country will hear it. The immediate future of aeronautics largely will depend on these selections so make sure that they are right.

#### LEGALIZED HOMICIDE

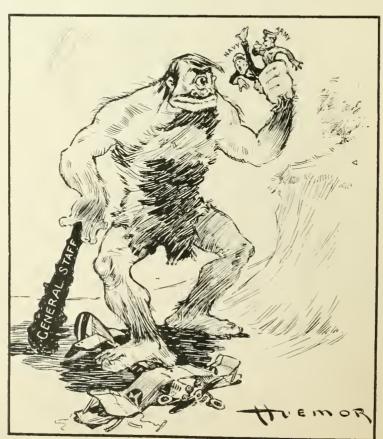
THE sad and untimely end of Major Moose and Cadet Point at Mitchel Field is another chapter added to the Book of Sorrow of the Air Services of the United States.

This volume will continue to grow as long as our flyers are compelled to use the planes built during '16, '17 and '18.

D.H. s at least eight years old are being used to train pilots at the air service flying schools.

How much longer this legalized homicide to continue? A certain amount of danger will always be found in training our youth to fly, but to compel this training to take place in a "flaming coffin" is beyond the pale of human intelligence.

The War Department should issue an order forthwith, compelling the destruction of every war-built plane. To continue the use of this ancient aircraft is an assurance of a continuous loss of life. Stop it; and stop it at once!



LEAVE IT TO THE GENERAL STAFF

# A NOD AND A WINK

NDOUBTEDLY the next war will be fought in the air," declared the young lady editor of Aero Digest. With the calm detachment of one who won't have to go to the war, she powdered her nose; while I thought idly how much brighter and happier wars could be made if half of the army was of the sex using face powder, instead of the whole army being of

that sterner sex using powder of the gun and insect varieties. This thought should be valuable to the War Department; for I can assure them that if they want any of us old boys to take part in their next show they will have to make it much gayer and snappier than they did the last one. For instance, the idea that a dilapidated old general can arouse any enthusiasm in troops is utterly fallacious. What the boys need, and crave, is a charming young lady colonel to lead them. They'd follow her anywhere.

"I'd just love to have you write a serious article on National Defense," continued the Editor, gazing critically at her reflection in a pocket-mirror. "Bring out the primary importance of aircraft, showing how the Army and Navy are merely the second and third lines of defense, while on aircraft will devolve—"

Well, that's how I got started on an investigation of our Air Defenses. As a stranger in New York, I was handicapped by not knowing just where to go for information, but the Battery sounded like a good place to start. There, among all the guns and shells peculiar to batteries, I figured that I'd find at least a few artillery observation planes, and perhaps a pursuit squadron. Then, of course, I knew that for the past year the entire Air Service had been employed towing targets for the anti-aircraft batteries—holeproof targets, apparently. The Battery was the place to go to, then, so I took the Subway to South Ferry. If I'd stayed on that train for six more stations I'd have been able to speak Yiddish and Polish. Another nickel invested in a subway ride will make me a linguist. Only trouble is that one has to come up for air every few stations. I don't know whether the land shortage in New York has driven folks to raising garlic in the subway, or whether that's the place where they make the limburger. But I do know that it was very exhibitanting to get out and draw in a few good breaths of air at the Battery—very nice air, too, though with a faint flavor of bilge-water about it.

Unfortunately, I was about a hundred years too late to find any battery at the Battery. It is now only a park and an aquarium. Years ago a large building in the park had been used for political meetings, after which the New Yorkers naturally turned the place into an aquarium. I met an Air Service officer there. He said the Army General Staff had been making suckers of the Air Service for so long that now he felt quite at home among the fishes. I left him gazing thoughtfully at a large cod floating placidly in a glass tank. The cod wasn't getting any place either.

From the Battery it is only a short boat ride to Governor's Island. I had an idea that Al Smith lived there, and that it was named after him, because he's been Governor of New York State since about the time they discovered the island. But when I landed there from what is probably the smallest, oldest, and dirtiest ferry in the world, I found that not only did Governor Smith not live there,

On De Fence By

by baldwell

but that the Islanders didn't even know who was Governor of New York. It was an Army Post.

When I entered a General's office and told him that I was collecting information on our Air Defenses, and would he be so kind as to show me some of his planes, he seemed to be overcome by a heart attack. Actually, he turned quite blue in the face, and I thought he was passing out.

But instead, I was the one who was passing out-between four husky soldier laddies who had come running to answer a wild bellow from the General. When they hurried me down to the water's edge, they seemed so malevolent that I feared they were going to toss me in, but instead they signalled frantically to the little ferry, that had just pulled out, to come back and get me. When it backed up to the wharf, the soldiers pushed me aboard, bound me securely with heavy rope, and sat on me all the way to the Battery. This treatment was conducive to thought, apparently, for we were yet within hearing distance of the Island, where the General was hopping up and down when I last saw him, and from where I could still hear his enraged voice, when it occurred to me that he was the same doughty warrior who had been barred from the crucifixion board at the Mitchell Massacre. What a fox pass I had made! I recalled, too late, that since that time he had barred all airplanes from Governor's Island, and hated the very word "air" so cordially that before he would even breathe any of it, the stuff had to be strained through a sheet of General Staff Orders, which render the atmosphere bone dry.

At the Battery I was lifted from the boat, carried across Whitehall Street, and tossed on the doorstep of the Third Naval District Headquarters, evidently as an insult to the Navy. As the boys departed, I asked them where I could go to find an airplane, and they told me where I could go. But I'm not going. Besides, nobody these days believes there's any such place, unless they have spent a Sunday in Philadelphia.

As I lay on the steps of the Navy Headquarters watching the leaping pedestrians of New York worry the taxi drivers, a Commander with a kind face came out of the building, and with an ejaculation of surprise hurriedly untied me. When I explained why I had been trussed up, his face became less kind, and I thought for a moment that he was going to tie me up again. But with a muttered prayer, or something, he merely threw the rope at me and joined the taxi-dodgers that clutter up the streets of old New York.

I had just got to my feet when I was hurled to the pavement again by the body of a young man in uniform, that had been thrown with some violence from within the Navy building. Fortunately he landed on his head, and thus escaped injury in any vital part. In fact, as I watched him, he sat up and grinned.

"Well, well," he remarked, as we both hurried away from there. "That was a little error on my part. I'm on a destroyer at present, but I wanted to transfer to Naval Aviation, so I went in personally with my application. I should have mailed it, I can see that now. Or telephoned it. Soon as I mentioned aeronautics to the Admiral he winked at two Commanders and said, 'He likes the air; give it to him.' And they did."

Together we journeyed to Fort Hamilton, on the water's

edge of a place called Brooklyn, used mainly to support one end of Brooklyn Bridge, which Brooklyn citizens find handy when they decide to emigrate to the States. At Fort Hamilton we found the remains of an old kite balloon hangar. But it was outside the fort, as it obviously wasn't worth guarding. Why guard Brooklyn, when it comes to that?

This hangar had been used to shelter two Naval Reserve seaplanes and one rowboat kept to tow in the two ancient flying fish when they should become disabled, which on the average was every second flight. The winter wind, however, and even the zephyrs of summer (I've been reading poetry) gradually ripped off sections of the rusty tin roof until finally there wasn't enough left to shelter the rowboat. The seaplanes had been shelterless for months, but when the Navy saw their rowboat exposed to winter's howling gale and summer's glaring sun, the skipper had taken his little daughter to bear him com-pau-nee-(There! I knew that reading poetry and being in Brooklyn was bound to have some effect on me. I've got to cut out this dissipation, or no knowing where I'll end up). What I was trying to say was that when the Navy saw their rowboat getting wet, they moved it to a decent hangar at Rockaway, and let a couple of pilots fly the seaplanes over. Or taxi them, I guess they had to. But the planes got there the same year that the boat did. I saw them, and I wonder how they ever made the journey. It must be all of 12 miles. Now the two old air backs are used by devoted Naval Reserve instructors to train students. Seems a waste of time training them, for there's nothing for them to fly when they graduate, unless they go over to Italy and work for Mussolini. I hear he's building some planes. Going to free the Egyptians from the English, so they can work for the Italians, I understand.

The Army Air Service, it is alleged, have a flying field at Garden City, which they call Mitchel Field, though there is talk of changing the name since the excommunication of General Mitchell. The names aren't spelled the same, you will observe. Extra "L" in Mitchell. A lot extra. But I was on that field, during the Air Races last year when the Army boys were guarding the place with their little snickersnees, or bayonets, and my recollections were so painful that I wouldn't dare go back. So whether or not New York is being defended from Mitchel Field, I do not know. But I do know that I am not going to get pushed full of holes again by going there to find out. Before National Defense comes Self Defense.

While in the wilds of Long Island I received a radio from the Editor, asking me to proceed at once to Washington, sometimes referred to as White-washington, and pursue my investigations there, calling first on the Modock Association. Their worthy president, Mr. Crabbit, has done much for aeronautics in this country. I don't know what he's done. I'm just quoting from the Modock Monthly for May which says he's done a lot. He writes of himself, and tells how he hooked up a bag of sawdust and a can of water in a plane, way back in 'I8. I don't know what good that stuff was to him, but he picked it up anyhow. Shows he was a careful, saving sort of man. He tells how he picked up this stuff (I've picked up lots more interesting stuff in London and Paris, myself) and adds that those who are interested in further detail can find the original of his paper at the Modock Historical Board. I bet there'll be an awful rush on that place. Shouldn't be surprised if somebody got hurt in their eagerness to get all the details.

This champion picker was the first gentleman I called

on for information about National Defense. If anyone should have the dope, Mr. Crabbit should, for his association is the high priest and arbiter of destiny of all things aeronautic in America. When asked what he thought about the matter, Mr. Crabbit said: "All of our thinking is done for us by the Navy Department. Here we are concerned solely in creating more chapters in the Modock Association, so we will have less members. If we only work hard enough, we expect that by the end of 1926 we will have ten times as many chapters, and no members at all. In our spare time—and what a lot of it we have! we spread the gospel of New England culture among the representatives from the remoter, and may I add cruder, parts of our Republic. Eventually we shall establish the Watch and Ward Society in White-washington, which will be a great advance in morality. Since coming here I have read all the books that were barred from Massachusettshere his eye took on a bright sparkle which he almost instantly subdued,—"and I realize they should have been barred. As for aeronautics, all I know about it is in the Modock Monthly, with my picture on the cover, which I know you will enjoy."

A charming gentleman, Mr. Crabbit. Reminded me rather of my own dear old Aunt Aggie, dead and gone—God rest her soul!—these many years. As he talked, I could understand how under his leadership the Modock Assn, has progressed until now you can barely see it. Yet a little more time, and it will be tucked away with Aunt Aggie—unless at the next convention the members elect someone like Bill Mitchell or Eddie Rickenbacker to the presidency. Perhaps it's "too late for Herpicide."

When I called upon the Hon, Curt Filbert, a very important nut with the Navy, he tossed aside his pen and greeted me with all the affection one literary man has for another, if their work doesn't conflict. Curt writes little brown bear stories, while I confine myself to the larger and more noble bull. He said the editors had been shipping his stuff back to him with annoying regularity, and that if it wasn't for his pay in the Navy he didn't know how he could live by literature. I've read his stories, and I don't know how he could, either. He told me the sad case of the Fat Lady with Ringling Bros. Circus, who left her job a year ago to live by her pen. Now, after living on her earnings as a writer for nearly a year, she was back with the show as the Living Skeleton. Another triumph of literature over dieting.

When I asked Curt if he agreed with the proposition that the determining factors of the next war would be in the air, he replied:

"I do not agree with it at all. Of course, you realize that while I was in the Naval Academy and in contact with the service as a boy, the way we got into the air in those days was by shinning up the rigging, and what I speak of now is the result of sitting in the rigging. The range of aircraft is comparatively short, and always will be. I regard the statement that the next war will be in the air as an absurdity partaking of the Jules Verne type of literature. That's what I said before one of the IO1 Aircraft Investigating Committees, and if you wade through 17,861 pages of testimony you will find it."

"Then what will be the determining factor" I asked. "The Navy, naturally," he affirmed. "Our ships will be bomb-proof, bullet-proof, mine-proof and moth-proof. We'll run them ashore and fill them with concrete so they can't be pulled off again. We may even cover the decks with earth and raise potatoes. At last the dream of naval

(Continued on page 70)



#### SPECIFICATIONS FOR A GOODYEAR AIRPLANE TIRE



1-As big as it should be (to carry its burden easily and gently)
2-As light as it may be (to avoid superfluous weight and resistance)
3-As strong as it can be (to protect pilot, cargo, and ship)

F course, the dimensions of a Goodyear Airplane Tire are determined by highly-skilled engineering, and consideration for the type and size of the plane.

And similarly, the weight of a Goodyear Airplane Tire is determined by its size and the duty to which it will be put.

But on that third point: Goodyear workers put something more into

an airplane tire than precise engineering. For here is an organization that has full faith in aviation. Here are men who give the very finest they have in materials and workmanship into any product for aerial service.

Goodyear Airplane Tires are offered by men who want pilots to have the very best. So are all other airplane parts — everything in rubber — made by Goodyear.

Aeronautic Department

THE GOODYEAR TIRE & RUBBER COMPANY, INC., AKRON, OHIO



# THE YARNS OF "HELL'S BELLS" O'NEIL

ASS me the bottle," says

The Woman Who Reformed the Sauadron

her, and the place looks like a Hell's Bells' O' Neil,

"and let us pray for the location and let us pray for the location land downwind. I've By James Warner Bellah light. They ain't taking no more interest in the war than a staff

souls who land downwind. I've seen many strange things in my life, but I never yet saw a war that could be run properly after the women get any nearer the hangars than the Rue d'Amiral Courbet. It all happened while the Major was away. He was a hardboiled lobster that Major, but he'd had his shell cracked by a couple of 'emma gee' steel jackets so he was playing his poker in Ward Cat Etaples for the nonce. For my part, I'd been up visiting a sick friend in Paris who had had a

relapse, so I wasn't around either when it happened.

captain. They don't drink or smoke or swear any more and half of them is carrying pocket combs and handkerchiefs. "'Mac Pherson,' I says, 'get me four drinks and a rifle.'
"'No good,' he says. 'She rates the mess 'cause she

"Well, I bust into the 'drome about four pip emma hungry as a chorus girl in an expensive restaurant, and dirty as a sloppy louse. I leave 'Sarah' at the hangars and steam up to the mess-shack on high, looking for a smoke and a meal. For a moment I think I'm in the wrong place. First of all, it's all newly painted inside and there is white curtains at the windows and a carpet on the floor. Then I see Mac Pherson's ugly face and I know I'm home. 'Leaping Moses,' I snort, 'give us a smoke, Mac.'

ranks as a captain and the boys did all this themselves. They'll be painting the ships pink next and sewing Brussels lace borders on their trailing edges. This is the worst complicated war I was ever in. It ain't safe, nor moral nor decent any more.'

"'Shh!' he hisses. 'Stop your swearing and wipe yer feet on the mat there!'

"'By the spavined hind leg of a duck!" I says, 'the shock'll kill the Major.' "'Yeh,' he says. 'You're right. I took me a bath meself over it yesterday.'

"'She's gotta go before he gets back, that's all there is to it,' I says, but she didn't.

"'Yeh!' I says, 'Pardon me for busting into your boudoir,

"The next three weeks was hell. The boys gave up vingty-one and took up euchre. Also the favorite cuss words was 'lands-sakes alive' and 'dear, dear me' and 'merciful heavens.' Half of them was drinking milk and the other half was knitting wristlets for soldiers. The flying fell off so much they wouldn't of shot a Hun if they found

but who the hell is acting O. C. here anyway? Have you got a cigarette or haven't you?'

I leave this squadron five minutes and it stuffs a handker-

him in their own sleeping bags. Mac Pherson was shaving every three days and the mess sergeant was wearing white pants and serving all the meals from clean plates. I began to feel like I was running a girls' boarding school and 220 Squadron, our old whiskey comrades, sends over a note asking how O'Neil's Petticoat Circus was coming along and would we like two lumps or lemon and could we give them a good recipe for cup cake and there was a lovely

"'Shh!' he hisses. 'You can't smoke here, man!' "'Say!' I yelps, 'my wings aren't on my shoulder blades.

chief up its sleeve. What's the idea? "'You'll see,' he says. And I did.

"Right then and there the door opens and I never seen

such a sight in my life. In come the boys with their best white cord britches on, their belts polished and their hair soaped down and three or four of them had even gone so far as to wash their necks! In the midst of them is a woman. She's a dapper little girl with yellow hair. She's all tricked out in Hotel Cecil blue and gold, which was that ice cream uniform Bolo House invented after they ruined the Royal Flying Corps by mixing it with one part Navy and two parts Ground Generals. Well, the gold bands on this girl says 'Captain' and right away I see the yellow hair says 'Good-bye Squadron.' I liked to of swooned. Mac bumrushes me out the back way to wash up. 'She's here in charge of the lady truck drivers,' he says, 'and there ain't anything to do but pray. All the gang's in love with



"Half of them was drinking milk and the other half was knitting wristlets for soldiers."

bargain in pink lace guimpes at Au Printemps and a lotta other things that an officer and a temporary gentleman wouldn't repeat even to a brigadier general. Well. I was just looking around for another war to get me a job in, when the Major comes back from Etaples. I grab him and sit him down in the Flight Office. 'Listen, Joe,' I says, 'I gotta shock for you. The squadron's gone suffragette and there's hell to pay. We got an officer skirt dumped on us from Bolo House, and—and—

"'Yeh?" he yells. 'Don't tell me the rest, I've read a book. Bring her in while I sack her, and get Wing H. Q. on the phone while I ask em politely what it is they want me to run down here.'

"Well, I beat it out and send in this lady captain and (Continued on page 74)



## The Meaning of "Air-Wise"

#### The Star in the Sky

Whether on the wing of a mail plane, a bomber, a naval reconnaissance plane or a commercial carrier, the tri-color star of The Glenn L. Martin Company holds the same significance to the experienced observer - engineering supremacy-fine workmanship and unremitting care—experiencedating back to the infancy of the art sixteen years ago-dependability.

O build a plane that will fly is no longer an achievement. To build one equal to all the varied conditions of the air, of the landing field and the emergency landing and to build into it safety factors ample for every condition is a wholly different task. Half-knowledge is insufficient. It requires the combined abilities of designers, engineers and craftsmen who have grown "air-wise" through long, varied and extended firsthand experience in every phase of mastering the air.

#### THE GLENN L. MARTIN COMPANY

Builders of Quality Aircraft since 1909 CLEVELAND, OHIO



### WESTERN NEWS

#### CLOVER FIELD

THE accompanying photograph, of Clover Field, Santa Monica, California, taken by Kenneth Montee for Aero Digest, gives a comprehensive view of the large tract of land, 173 acres in all, taken over by the City of Santa Monica and the Douglas Company as a municipal airport and park. It includes 7½ acres on which the Douglas Company is going to build its new plant.

Clover Field is one of the oldest airports in Southern California. It houses the planes of some of our best flyers, and was the scene of the start and finish of the Around-the-World Flight.

The first building to the right of the photograph is the headquarters of the Clover Field Army Air Service, and contains the club rooms and offices of Army Reserve flyers. Lieut. Kenyon, commanding officer, and Capt. Moulton are stationed permanently here. 220 reserve officers, organized as a complete pursuit group, keep in training from this station. This right-hand section of the field is also the final test ground for all Douglas built army planes, with Lieut. Nelson of Around-thc-World fame in charge for the army.

The next two hangars are U. S. Army hangars, and house the equipment used by the Reserve Army flyers,—11 Jennies and 1 D. H.

The small buildings to the left of the army hangars are the gas and oil station for commercial flyers and the field lunch room, all under the management of Bob Lloyd. Joining the oil station is Bob Lloyd's oil hangar and shops, housing three commercial ships and a student ship. Bob Lloyd is chief pilot with Jack Waterhouse and Bob Moore, mechanics.

The hangar and shops of the K. W. Montee Aircraft Company are next. The Montee firm specializes in eustom-built aircraft, oblique survey photography, passenger and commercial flying and student instruction. This hangar houses four ships for the above work, and has two new ships under construction. It is where the winner of the On-to-New York race was built a year ago. The pilots are Kenneth W. Montee, Ralph Montee and J. W. Montee, the father of the two boys, who does the field flying.

The next hangar, with the lettering on the roof is the headquarters of the Lyle-Hoyt Aireraft Company, the West Coast distributors for Travel Air planes. Four ships for passenger earrying, commercial work and student instruction, also four private owned ships are housed here. Pilot Frank Clark makes this his headquarters. The pilots are Fred Hoyt, George Lyle, and Ted Peters, who is also chief mechanic, with one assistant.

Al Wilson's hangar is the next one, housing three ships, all used for moving picture work. Al Wilson and Frank Tommac are the pilots.

To the left of this is a small hangar used as a store house for finished planes by Catron and Fisk, builders of aircraft built to special requirements

The L. M. Bach Aircraft Company occupy the next two hangars for shops and storage. There are eight planes housed there, and two planes under construction. Among the renters of space are W. H. Gilpin, G. W. Coleman, H. E. Patterson, George Far, and Bryant & Faulk. L. M. Back operates three ships for commercial flying and student work.

The next is the hangar and shops of Leo Nomis. The machine shop is well-equipped to handle reconstruction and repairs on any and all kinds of aircraft.

The small hangar between the above one and the next large one is a private plane hangar built for the Suppe Bros.

Joining the small hangar to the left is the hangar of Art Goebel who specializes in motion picture work.

Next comes the large storage hangar of the Douglas Company used for mail and government planes while testing and before delivery. Three employees are on hand at all the times.

The double hangar at the left is Leo Nomis' private hangar, housing his monoplane, Victor Fleming's new ship just delivered from Catron & Fisk, and one Jenny,

Every plane on the field is housed and kept up in the best of condition.

#### NEW FLYING RULES FOR LOS ANGELES

A NEW ordinance regulating flying over the city of Los Angeles, superseding an old ordinance which has been in effect for several years, was recently adopted by the city council.

The measure prohibits stunt flying and night flying except for commercial purposes; creates the office of inspector of aviation; prohibits flying over the metropolitan district of the city at a height lower than 2,000 feet, and over the residence sections at a height lower than 1,500 feet.

Every pilot must obtain a license to fly over the city, and his machine must be inspected semi-annually. To obtain a license to fly a pilot must pass an examination before the inspector of aviation.

The appointment of inspector of aviation will be made by the chief of police. Other provisions were that a \$5 inspection fee will be charged for the semi-annual inspection, and that permits to fly at night for commercial purposes must be obtained from the chief of police.

A \$500 fine or six months' imprisonment was set as the penalty for violation of the new ordinance.

#### YOLO FLIERS' CLUB

THE Yolo Fliers' Club, Woodland, California, claims the right to be called the first club in California to put in a flying field and golf course. The Parkridge Country Club, near Corona, California, which opened a flying field adjoining their golf course last Thanksgiving day, is therefore antedated by six years.

In September, 1919, the Yolo Fliers' Club was organized at Woodland, California; in the spring of 1920 it opened its flying field with a small air meet (a group of 20 planes); in 1921 they held one of the largest air meets ever staged up to that time on the Pacific Coast (Army and Navy meets excepted) with 61 planes representing fourteen American and foreign factories, and awarding \$1,550 in prize money to the winners of four races.

The same year (1921) they opened an 18-hole golf course and the following year (1922) a club house.



Photo by Kenneth W. Montee.

Clover Field, Santa Monica, one of the oldest airports in Southern California.



# AMERICA'S STANDARD for NATIONAL DEFENSE





DOUGLAS O-2 OBSERVATION AIRPLANES

ADOPTED by the UNITED STATES
ARMY AIR SERVICE
NATIONAL GUARD
MARINE CORPS



### THE DOUGLAS COMPANY

Santa Monica California





The Ryan M-1 equipped with a Super Rhone engine.

### WESTERN AIR EXPRESS PASSENGER SERVICE

DAILY passenger service by air between Los Angeles and Salt Lake City has been opened by the Western Air Express. Both eastbound and westbound planes, which carry the mails under contract with the Post Office Department, have space for two passengers with twenty-five pounds of baggage each. Above that amount an excess charge of 50 cents per pound is levied.

The fare for the one-way passage is \$85 and round trip, \$145.

Planes leaving Los Angeles at 7:35 a. m. will put the traveler into Salt Lake City in ample time to board the fast Overland Limited train for Chicago and the East. On the westbound trip, leaving Salt Lake City at

10:10 a. m. mountain time, the plane arrives at Los Angeles that afternoon.

Scheduled time for the 660-mile airway is seven hours and forty-five minutes eastbound and eight hours and fifteen minutes westbound, including fifteen-minute stops at Las Vegas, Nevada.

### A E R O N A U T I C S IN VOCATIONAL SCHOOL

THE Polytechnic vocational training school at San Louis Obispo, California, through the efforts of Al Ebrite and Glen H. Warren, both of Long Beach, is to include aeronautics as one of the branches of training. This course will include aeronautical engine or motor building, construction of airplanes and practical flying.

Each student will receive from 40 to 60 hours under a capable pilot. The flying course will consist of primary flying, advance and cross-country flying, thereby fitting the student for almost any position where a capable pilot is required.

Being under the auspices of the State of California, the cost to the student will be within the reach of all, \$1 per day for room and board; the only other charge being \$7 a year student body fees. The balance of the expense is covered by taxation.

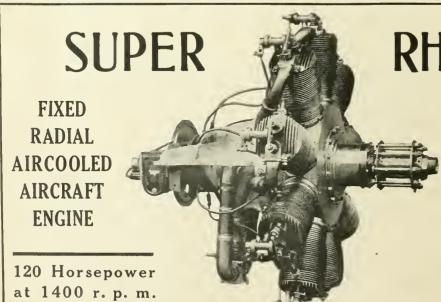
The entire course can be covered in about 250 days instruction. During the coming fall the scholars are to lay down and start construction on two ships.

Glen Warren will have charge of the engineering and Al Ebrite of the flying instruction.

### THE SUPER RHONE RYAN M-I MONOPLANE

A FTER nearly 100 hours of testing, this Super Rhone motor, built by the Tips and Smith Company of Houston, Texas, proved an ideal installation for the new Ryan M-I monoplane.

At a demonstration of this motor at Long Beach, California, it was discovered that with the motor turning over 1,000 r.p.m. the plane could not be stalled enough to go into a dive to regain speed. The plane likewise could not be made to spin. With motor off, after flying speed was lost the plane mushed toward earth, nose high with no tendency to dive or spin.



**RHONE** 

New model ready for July delivery. Better than ever—smoother performance. Equipped with Zenith carburetor. Full Udylite treated.

**\$750.** 

F.O.B. Houston.

Write for Booklet AD1

Super Rhone Engine & Flying Corporation

Exclusive Sales Agents

P. O. BOX 153

HOUSTON, TEXAS

1st. After flying this one monoplane and its original motor continuously for ninety days over the entire Pacific Coast, in and out of all types of fields, over all kinds of country—

**2nd.** After personally visiting every aircraft factory in the United States, and after inspecting every type of commercial airplane—

### PACIFIC AIR TRANSPORT

operators of the biggest contract air mail route in America chose as standard equipment

### RYAN M-1 MONOPLANES

WHY? Because by simple arithmetic Ryan M-1 has carried the "just right" pay load of 650 pounds at a lower cost per pound-mile than any airplane now on the market.

### RYAN AIRLINES, Inc.

San Diego, California

WHAT BETTER EXAMPLE OF PREPAREDNESS THAN THE EQUIPMENT AND PERSONNEL OF A SELF-SUPPORTING DAILY AIRLINE THE LENGTH OF THE PACIFIC COAST?



Capt. Ching, head of commercial aviation in China, and Jack Frye of the Aero Corporation of California.

#### CHIEF CHINESE AIR NOW IN AMERICA

DAPTAIN T. D. K. CHING, of the CAPTAIN 1. D. R. CHARLE, Chinese Air Force and head of commercial aviation in China, has been visiting the air centers of California, investigating the latest aviation material and developments with a view to recommending to the Chinese aviation leaders the aircraft best suited to their requirements.

"America, through her business men and manufacturers, has a tremendous opportunity to join with China in opening a great new world field in aviation and commerce," said Captain Ching.

"No other nation is so well-liked in China. The Americans, not only through such matters as the Boxer indemnity, and their tactful handling of past situations, but their recognition of the Chinese as entitled to consideration in their own affairs, are immensely

During his stay in America, Captain Ching expects to arrange to send groups of Chinese aviation students to this country to complete their training

#### WELDING SHOP OPENED

A. OLSON, for the past year with C. A. OLSON, for the past, the Douglas Company in the capacity of aluminum tank welder, decided that there was need for a shop specializing in welded aluminum tanks for manufacturers of air-

Backing his convictions, he has opened a shop in Santa Monica. He invites builders of airplanes to send him sketches and dimensious of special tanks and he will furnish data on the proven reliability of aluminum tanks with welded seams.

#### LIFEGUARD SERVICE BY AIRPLANE

FRED HOYT of the Lyle-Hoyt Aircraft Company, whose headquarters are at Clover Field, Santa Monica, has made arrangements with the Santa Monica Outlook and the Santa Monica Canyon Bath Houses to act as an auxiliary to the beach lifeguard

Clover Field is situated just one mile from the heach. The bath house office, the Outlook office and the offices of the Lyle-Hoyt Company being all connected by telephone, makes it possible to have a plane at the beach from two to four minutes from the time an alarm of distress is sounded.

Two Travel Air planes are equipped with life preservers, and as soon as the office receives word that they are required, one or both pilots leave at once for the place where the distress signal shows. Flying low over the water, they drop life preservers to the drowning

They are never called upon except in cases where the swimmer in distress is too far out for the beach life savers to reach them. They have had a number of calls so far this summer, and are considered a great help to the bathing beaches.



Pilot George Lyle of Clover Field and

#### COURSE AVIATION

Including

FLYING INSTRUCTION - RIGGING SOLO EXPERIENCE - COMPLETE GROUND COURSE AERIAL MOTOR REPAIR - THEORY OF AVIATION

#### THE AERO CORPORATION OF CALIFORNIA

formerly Burdette Airport

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Los Angeles, Calif.

Telephone, Thornwall 2545

K.W. Montee Aircraft Co.

Clover Field
Santa Monica, Cal.

SPECIALIZING IN

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When buying a PLANE ask about the

### KING BIRD

three-place luxury-plane

Manufactured by the

Airplane Manufacturing Division WESTERN AIRPLANE CORPORATION Dept. 267

53 West Jackson Boulevard, Chicago, Ill. DEALERS INVITED

# THE ADVANCE AIRCRAFT COMPANY

largest producers of commercial aircraft in America announce price reduction on the improved

WACO-9

three-seater

\$ 2 2 5 0 at Troy, Ohio

More WACOS are now in service for profit and pleasure than all other ships now in production in America.

# THE PERFORMANCE MADE THE DEMAND

Write for details

THE ADVANCE AIRCRAFT COMPANY TROY, OHIO

# WITH the SERVICES

#### NAVAL AIRCRAFT BILL PASSED BY SENATE

WITHOUT a record vote and after only 16 minutes of debate the Senate passed the naval aircraft bill on June 3. The bill makes provision for a five-year building program which will bring the air strength of the Navy up to 1,000 fighting planes and maintain it at that figure.

Two rigid airships of approximately 6.-000,000 cubic feet capacity and about 100 feet longer than the Shenandoah are authorized by the bill at a cost of not more than \$8,000,000 for both ships. There is also an authorization for one experimental metal-clad airship of approximately 200,000 cubic feet, to cost not more than \$300,000.

Another provision of the bill establishes the office of Second Assistant Secretary of the Navy, who is to be assigned to general supervision of naval aviation.

Appropriations authorized by the bill over the five-year building period total \$85,078.750 for the construction of planes.

#### MAIOR WALSH RESIGNS

MAJOR RAYCROFT WALSH, on duty in the office of the Chief of Air Service, resigned his commission on June 1. Major Walsh is an expert on Latin American aviation and his loss will be keenly felt. By leading a flight through the various Central American countries several years ago he established contacts that will constantly be of great value to the country. In addition to his experience as an aviator, Major Walsh was an expert in finance and had for several years served as Finance Officer in the office of the Chief of Air Service. He was also considered an authority on various kinds of Government finance.

Major Walsh entered the Regular Army from Massachusetts in 1910 as a second lieutenant of Coast Artillery. He was transferred to the Air Service in 1920.

#### TEN MINUTE AIR PHOTO

R APID aerial photography by a new secret process was publicly demonstrated before a large assembly for the first time at French Lick Springs, Indiana, during the semi-annual national meeting of the Society of Automotive Engineers. Within the short time of ten minutes a picture was exposed, developed and finished in an airplane and dropped by parachute to the waiting spectators below. It was taken by Dr. S. M. Burka from an Army Air Service plane flown by Lieut. George W. Goddard, from McCook Field, Dayton, O. Lieut. Goddard and Dr. Burke are chief and physicist of the aerial photographic branch of the engineering division of the Air Service.

The performance was given to demonstrate the army's process of quick work photography and was carried out in connection with the development of methods for military reconnaissance work. Within a few hours after the picture was taken, a lantern slide from it was exhibited.

#### AIR SERVICE TACTICAL SCHOOL GRADUATES

THE following officers were graduated in the sixth class at the Air Service Tactical School, Langley Field, Virginia, on June 17, 1926:

Maj. Michael F. Davis, Maj. Fred H. Coleman, Maj. Leo G. Hoffernan, Maj. Horace M. Hickam, Maj. Hugh J. Knerr, Capt. Early E. W. Duncan, Capt. William E. Farthing, Capt. Lloyd L. Harvey, Capt. George C. Kenney, First Lieut, St. Clair Streett, and First Lieut. Langhorne W. Motley, U. S. A.

Maj. Charles A. Lutz, Capt. Louis M. Bourne, First Lieut, Ford O. Rogers, U. S. M. C.; and Capts. Carlos Sartorious and Carlos Pasta, of the Spanish Army,



Dr. Burka and Lt. Goddard with an air photograph made in ten minutes.

#### 99TH AERO SOUADRON AT SHEPHERD FIELD

THE summer camp of the 99th Aero Squadron and the 3d Photo Section will be held again this year at Shepherd Field, Martinsburg, W. Va. The camp will begin July 2 and last for ten days.

Lieut, Skemp is in temporary command of the 99th and Lieut. Robert Nowland commands the photographic section. The full complement of men who will camp at the field will number about 130, with twelve officers, including flight surgeon, supply officer, radio and canteen officers.

#### ARMY AIR SERVICE RESERVE ORDERS

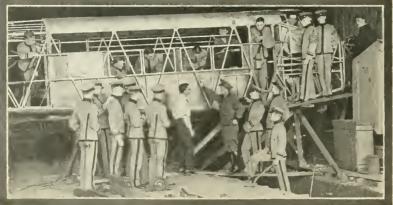
THE following Army Air Service Reserve orders have been issued as of the dates indicated in brackets:
Borden, 2d Lt. David Mering, to active duty at Washington, D. C.
Frese, 2d Lt. Henry August, ordered to active duty at Kelly Field. Texas.
Haight, 1st Lt. Edward Meeker, ordered to active duty at Maxwell Field, Montgomery, Ala (June 16)
Harmel, Capt, Falk, to active duty at Channte Field. Reutoul III.

Harmel, Capt. Falk, to active duty at Channte Field, Rautoul, Ill. (June 3) MacShort, 1st Lt., ordered to active duty at Mc-Cook Field, Dayton, Ohio. (June 16)

#### NAVY AIR SERVICE ORDERS

NAVY AIR SERVICE ORDERS

THE following Navy Air orders have been issued as of the dates indicated in brackets:
Anderson, Chief Gunner Alexander, detached Torpedo and Bombing Plane Squadron 1, to Naval Training Station, Naval Operations Base, Hampton Roads, Va.
Baker, Albert E., Chief Bosn. detachted V. O. Squadrons One, Naval Air Station, San Diego, Calif.
Bolger, Lt. (jg) Joseph F., detached Aircraft Squadrons, Scouting Fleet, to Staff, Aircraft Squadrons, Scouting Fleet, to Staff, Aircraft Squadrons, Scouting Fleet, and Aircraft Factory, Navy Yard, Philadelphia. Pa. (June 29)
Bowes, Lt. Harvey R., detached Aircraft Squadrons, Scouting Fleet, to Naval Aircraft Factory, Navy Yard, Philadelphia. Pa. (June 29)
Bowes, Lt. Harvey R., detached Aircraft Squadrons, Scouting Fleet, to Naval Air Station, Anacostia, D. C.
Boyd, Lt. Comdr. Thales S., detached Naval Air Station, Lakehurst, N. J., to U. S. Oklahoma. (June 24)
Brerton, Ens. W. H., detached U. S. S. Converse to Naval Air Station, Pensacola, Fla. (June 19)



West Pointers gather first hand knowledge of the Sikorsky transatlantic plane.



In fact, the tremendous strides this new science has taken in recent years have been facilitated by the inventions and improvements of Goodrich rubber experts.

Laced-on-type Windshield for airplane tires

Particularly efficient is the Goodrich Airplane Tire. Its strength, its lightness and its ability to absorb shock have made it a leader. Its superiority in-aviation is as

pronounced as is that of the Goodrich Silvertown in the motor car field.

The Name Goodrich on any rubber aeronautical equipment is your protection and a pledge of utmost reliability.

THE B. F. GOODRICH RUBBER COMPANY
Established 1870 Akron, Ohio

### AIRPLANE TIRES

and ACCESSORIES

"BEST IN THE LONG RUN"

Butrick, Chief Carpente: Samuel, detached Arreraft Squadrons, Battle Fleet, to Naval Training Station, Great Lakes, Chicago, Ill. (June 24) Callaway, Lt., Steven W., detached Aircraft Squadrons, Scouting Fleet, to Naval Air Station, Anacostra, D. C. Coffin, Ensign Philip R., detached U. S. S. Utak, to temporary duty Naval Air Station, Pensacola, Fla. (June 1) to temporary duty Naval Air Station, Pensacola, Fla.
Connolly, Lt. (j.g.) Lawrence F., detached U. S. S. Cincinnati, to Naval Air Station, Pensacola, Fla.
Davenport, Lt. R. E., to Naval Air Station, Lakehurst, N. J.
Davis, Lt. (j.g.) William P., detached (June 3)
Davis, Lt. (j.g.) William P., detached V. O Squadron 6, U. S. S. Wyoming, Aircraft Squadrons, Scouting Fleet, to U.S. S. Utah (June 11)
Deitzer. Chief Machinist, Raymond O., detached Aircraft Squadrons, Battle Fleet, to Naval Air Station, San Diego, Calif. (June 24)
Dodson, Lt. Harry L., detached Columbia University, N. Y. to C. f. o. U. S. Lexington, Unue 10)
Durgin, Lt. Calvin T., detached Avaval Aircraft Factory, Navy Yard, Philadelphia, Pa., to Aircraft Squadrons, Battle Fleet, (June 23)
Dyer, La James E., detached V. F., Squadron One, Aircraft Squadrons, Battle Fleet, to Naval Air Station, San Diego, Calif. (June 23)
Fish, Howell C., detached Naval Air Station, Pensacola, Fla., to temporary duty U. S. S. Chewing, Chemistry, Charles, Fla.

Connolly, Lt. (j.g.) Lawrence F., detached U. S. S.

Cincinnati, to Naval Air Station, Pensacola, Fla catapuns C. S. S. Lexington and U. S. S. Sara-toga.

Kauffman, Lt. Frederick B., detached Columbia University, New York, to U. S. S. Saratoga. (June 15)

Kirkpatrick, Lt. Comdr. Rohert D., detached aide on staff, U. S. Fleet, to Bureau of Aeronautics. on staff, U. S. Fleet, to Bureau of Aeronautics.

Lankenau. Ensign Wilfred E., detached U. S. Naval Air Station, Pensacola, Fla., to U. S. S. Conwerse.

Lenson, Lt. Robert H., (S. C.) detached U. S. S. Brazos, to Naval Air Station, Lakehurst, N. J. Lynch, Lt. William A., detached U. S. S. Quail, to Naval Air Station, Pensacola, Fla. (June 10) McCord, Ensign William J., detached U. S. S. Stoddert, to temporary duty, Naval Air Station, Pensacola, Fla. William J., detached U. S. S. McCrary, Capt. F. R., to command the Langley McDonough, Ensign James F., detached U. S. S. Arctic, to temporary duty Naval Air Station, Pensacola, Fla. (June 3) McDonough, Ensign James F., detached U. S. S. Arctic, to temporary duty Naval Air Station, Pensacola, Fla. (June 3) Marriner, Chief Machinist, Walter F. Australia Squadron, Scotting Fleet, to Naval Air Station, N. O. B. Hampton Roads.

Marriner, Chief Machinist, Walter F., detached Aircraft Squadrons, Scouting Fleet, to Naval Air Station. N. O. B. Hampton Roads, Va. Martin, Lt. James A., detached U. S. S. Wright, to Naval Air Station, San Diego, Calif. to Naval Air Station, San Diego, Calif.

Mason, Lt. Comdr. Charles P., detached U. S.,

Langley, to U. S. S. Saratoga.

Moebus, Lt. (jg) Lucian, detached Torpedo and
Bomb Plane, Squadron One, Aircraft Squadron,
Scouting Fleet, to Navy Air Station, Pensacola,
Fla.

(June 24) Fla.

Morgan, Lt. Gail, detached Aircraft Squadrons,
Battle Fleet, to Bureau of Aeronautics.

(June 19) Moses, Capt. Stanford E., to Naval War College, Newport, R. I. for Naval War Station, Pensacola, Fla. (June 23) Keale, Ensign Edgar T., detached Naval Air Station, Pensacola, Fla., to U. S. S. Idaho. (June 9) Ober, Lt. James M., detached Naval Vard, Charleston, S. C., to U. S. Patoka. (June 1) O'Rear, Lt. George M., detached Officer in Charge

of Navy Recruiting Station, Birmungham, Ala. to temporary duty Naval Air Station, Pensacola, Fla.

Oster, Lt. Henry R. (C. C.), detached Naval Air Station, Pensacola, Fla., to Navy Yard, Philadelphia, Pa.

Parker, Ensign Elton C., detached U. S. S. Cincinnati, to Naval Air Station, Pensacola, Fla.

Parker, Lt. (jg) Harold E., detached U. S. S. Cincinnati, to duty Naval Air Station, Pensacola, Fla.

Ramsey, Lt. Comdr. De Witt C., detached command VT Squadron One, Aircraft Squadrons, Scouting Fleet to U. S. S. Langley. (June 19) Sall, Ensign Horman, detached U. S. S. Colorado, to temporary duty Naval Air Station, Pensacola, Tla.

Schlossbach, Lt. Isaac, detached Aircraft Squadrons, Scouting Fleet, to command Utility Plane Div. 2, Aircraft Squadrons, Scouting Fleet, Oscommand Utility Plane Div. 2, Aircraft Squadrons, Scouting Fleet, to Child Maval Air Station, Lakehurst, N. J., to U. S. S. Lexington.

Stattery, Lt. W. J., detached U. S. S. Neches to Naval Air Station, Pensacola, Fla. (June 23) Staticty, Lt. W. J., detached Aircraft Squadrons, Scouting Fleet, to Official, Naval Operations, Navy Department.

Spriggs, Lt. Alva J., detached Vale University, New Haven, Conn., to U. S. S. Saratoga.

Tasker, Lt. George C. (S. C.), detached Officer in Charge Destroyer Stares Office.) New Haven, Conn., to U. S. S. Saratoga.

(June 1)

Tasker, Lt. George C. (S. C.), detached Officer in Charge, Destroyer Stores, Office, Navy Yard, Phila., Pa., to Naval Aircraft Factory, Phila., Pa.

Tangren, Chief Machinist, Axel E., detached Naval Phila., Pa., to Naval Aircraft Factory, Phila., Pa.

Tangren, Chief Machinist, Axel E., detached Naval Air Station. San Diego, Calif., to Aircraft Squadrons, Battle Fleet.

Taylor, Lt. (j.g.) Herbert W., detached to Naval Air Station, Anacostia, D. C., to Aircraft Squadrons, Scouting Fleet.

Thomas, Lt. Robert W., (MC) detached Naval Air Station, San Diego, Calif., to U. S. S. Kanawaha.

Wagner, Lt. Comdr. Frank D., detached Naval Academy, to Aircraft Squadrons, Battle Fleet.

[June 15]

Academy, to Aircraft Squadrons, Battle Fleet.

Waldron, Ensign John C., detached U. S. S. Seattle, to temporary duty Naval Air Station, Pensacola, Fla.

Welborn, Lt. (j.g.) Max M., detached VO Squadrons 6 U. S. S. Utah Aircraft Squadrons, Scouting Fleet, to U. S. S. Wooming. (June 11)

Whitmore, Lt. Comdr. William H. (MC) detached Naval Air Station, Pensacola, Fla., to Naval Hospital, Norfolk, Va. (June 15)

Woods, Ensign Ralph W. D., detached U. S. S. Cincinnati, to Naval Air Station, Pensacola, Fla. (June 16)

#### ARMY AIR SERVICE ORDERS

ARMY AIR SERVICE ORDERS

THE following Army Service orders have heen listed as of the dates indicated in brackets: Alexander, Private Harvey, from Brooks Field, Texas to Kelly Field, Texas. (June 21) Antherg, 1st Lt. Trwin S., from Canal Zone, to Selfridge Field, Mt. Clemons, Mich. (June 10) Andrews, 1st Lt. William V., from Philippines, to Nashville, Tenn., as instructor N. Y. (June 10) Armstrong, 2d Lt. John Randolph, to active duty at Maxwell Field, Montgomery, Ala. (June 3) Bare, 1st Lt. George H., from Brooks Field, Tex. (June 11) Bock, Maj. Paul T., from McCook Field, Dayton, Ohio, to Chanute Field, Rantoul, Ill. (June 17) Booker, 1st Lt. Francis P., from Canal Zone, to Rrooks Field, San Antonio, Texas. (June 10) Brisbin, Private James, from Kelly Field, Texas, to Brooks Field, Texas, to Brooks Field, Texas, to Brooks Field, Texas, to Brooks Field, Texas, to Canal Zone, to Carr, 1st Lt. Dawferd list. (June 12) Canheld, 1st Lt. Dwight J., from Kelly Field, Texas, to Canal Zone, to Ganal Zone, to Ganal Zone, to Ganal Zone, to Gune 3) Cockille, 1st Lt. John D., from Brooks Field, San Antonio, Texa, to Philippine Islands. (June 10) San Antonio, Texa, to Philippine Islands. (June 10) San Antonio, Texa, to Philippine Islands. Cover, 1st Lt. Carl A., from Fairfield, Ohio, to Hawaiian Department. (June 18) Fey, 2d Lt. Howard M., leave of absence, 1 month, Fey, 2d Lt. Howard M., leave of absence, 1 month, [June 9] Fitzgerald, 1st Lt. Donald D., from Kelly Field. Texas to McCook Field, Dayton, Ohio. (June 14) Leave of absence 1 month. (June 24) Frank, Maj. Walter H., leave of absence, 2 months and 15 days. [June 11) Frost, 2d Lt. Norme D., leave of absence, 1 month (June 1) [June 1] [June 1] 24 days. (June 1) Hall, Col. Chalmers G., leave of absence, 1 month (June 10) Hall, Col. Chalmers G., leave of absence, 1 month. (June 10)
Ordered from Lakehurst, N. J., to Chicago, 1ll. (June 14)
Harbeck, 1st Lt. E. V., to Panama from New York about Dec. 2.
Harris, 1st Lt. Ray G., from Hawaii, to Fort Riley, Kans.
Heacock, 2d Lt. William O., from Kelly Field, Texas, to Fort Sam Houston, Texas, (June 23)
Hebert, 2d Lt. Oscar P., from Aberdeen Proving Grounds, Md., to Hawaiian Dept., order revoked.
Hewins, 2d Lt. James, Jr., leave of absence, 2 months.
Hickam, Maj. Horace M., leave of absence, 2 (June 3)
Hickey, 1st Lt. Lawrence P., leave of absence, 2

months.

(June 9)

Hillery, 1st I t. Edward A., from Canal Zone, to Langley Field, Hampton, Va. (June 10)

Holcomb, 2d Lt. Leslie P., from Fort Sam Houston, Texas, to Scott Field, Ill. (June 18)

Hopkins, 1st Lt. Frederick M. Jr., from Kelly Field, Tex., to Mitchel Field, Long Island, N. Y. ton, Texas, to Scott Field, III.

Hopkins, 1st Lt. Frederick M. Jr., from Kelly Field, Tex., to Mitchel Field, Long Island, N. Y.

Horton, 1st Lt. Clarence F., leave of absence for 2 months.

Johnston, Douglas, promoted from First Lieutenant to Captain.

Leave of absence 1 month.

Leave of absence 1 month.

Jones, 1st Lt. Edward D., from Kelly Field, Tex. to Canal Zone.

Keesling, Capt. Lloyd N., from Mitchel Field, Long Island, N. Y., to Denver, Colo. (June 2)

Kennedy, Maj. Frank M., to Air Service Engineering School, McCook Field. (June 12)

Kessler, 2d Lt. Alfred, Jr., leave of absence for 2 months.

Kraus, Capt. Walter F., from Massachusetts Institute of Technology, Cambridge, Mass., to Washington, D. C.

Lackland, Maj. Frank D., from San Antonio to Kelly Field, Texas.

Lea, 1st Lt. Royal B., from Pittshurgh, Pa., to Kelly Field, Tex.

Lingle, 1st Lt. David G., leave of absence for 2 months and 20 days.

Lingle, 1st Lt. David G., from McCook Field to Philippine Islands, order revoked. (June 10)

Lohman, Maj. Eugene A., leave of absence for 2 months and 10 days.

McCelan, 1st Lt. Hez, leave of absence for 2 months and 10 days.

McCellan, 1st Lt. Hez, leave of absence for 2 months and 10 days.

McCellan, 1st Lt. Hez, leave of absence for 2 months.

Martin, lst Lt. Pardoe, from Brooks Field, San Antonio, Tex., to Canal Zone. (June 10)

Mothey, 1st Lt. Langhorne W., leave of absence for 2 months.

Mortin, Maj. Earl L., leave of absence 1 month. (June 2)

Motley, 1st Lt. Langhorne W., leave of absence for 2 months.

Moyer, 1st Lt. Langhorne W., leave of absence for 2 month.

Moyer, 1st Lt. Langhorne W., leave of absence for 2 months.

South Maj. Earl L., leave of absence 1 month, 15 days.

Motley, 1st Lt. Langhorne W., leave of absence, 1 month, 15 days.

Motley, 1st Lt. Langhorne W., leave of absence 1 month, 15 days.

Motley, 1st Lt. Langhorne W., leave of absence 1 month, 15 days.

Motley, 1st Lt. Langhorne W., leave of absence 1 month, 15 days.

Motley, 1st Lt. Langhorne W., leave of absence 2 months 20 day Rohertson, 2nd Lt. Daniel H., from Reny Fleat,
Tex., to Fort Sam Houston, Tex. (June 2)
Royce, Maj. Ralph, leave of absence, 2 months.
20 days.
Shankle, 1st Lt. Clarence E., leave of absence, 3
months.
From Canal Zone to Langley Field, June 10)
Smith, Capt. Lowell II., from San Diego, Calif.
Office of the Maxilian Dept.
Smyth, 2d Lt. Thaddeus E., from Kelly Field,
Tex., to Fort Sam Houston, Tex.
(June 10)
Snavely, 2d Lt. Ralph A., from Philippine Dept.
to San Antonio, Tex.
Snavely, 2d Lt. Ralph A., from Philippine Dept.
to San Antonio, Tex.
(June 10)
Snell, Capt. Iyan B., from Brooks Field, San Antonio, Tex., to Kelly Field, Tex.
(June 10)
Snell, Capt. Iyan B., from Kelly Field, Tex.
to Canal Zone.
Souza, 1st Lt. William B., from Kelly Field, Tex.
to Canal Zone.
Spillinger, 2d Lt. Harry G., from Kelly Field, Tex., to Fort Sam Houston, Tex.
(June 10)
Starkey, 2d Lt., Benjamin T., from Aherdeen,
Md., to Langley Field, Hampton, Va.
(June 12)
Stone, Capt. Lawrence F., from McCook Field,
Dayton, O., to Langley Field, Hampton, Va.
(June 2)
Strober, 2d Lt. Kenneth C., leave of absence, 2
(June 2) Dayton, O., to Langley Field, Hampton, Va.

Strober, 2d Lt. Kenneth C., leave of absence, 2
months 10 days.

Van Nostrand, Maj. Percy E., leave of absence, 2
months 25 days.

Van Brunt, 2d Lt. Rinaldo, from Kelly Field,
Tex. to Fort Sam Houston, Tex. (June 7)

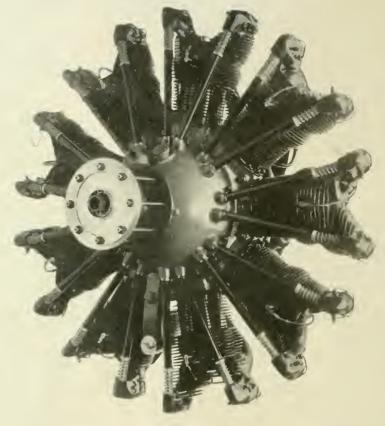
Voss, Capt. Thomas S., from Canal Zone to Pits.
burgb, Pa. (June 17)
Walsh, Capt. Robert L., from office of Chief of
Air Service, and duty as Junior aide at White
House, to Langley Field, Hampton, Va.

(June 17)

Walton, Mai. Leo. A., detailed member of Army House, to Langley Field, Hampton, Va. (June 17)
Walton, Maj, Leo, A., detailed member of Army Retiring Board, Denver, Colo., vice Maj, Harry L. King, Cavalry, relieved.
Wash, Maj, Carlyle H., leave of absence for 2 months.
Welkert, 2d Lt. John M., leave of absence 2 months.
Welkert, 1d Lt. Harold R., from Massachusetts Institute of Technology, Cambridge, Mass., to Mitchel Field, Long Island, N. Y. (June 16)
Wells, 1st Lt. Harold R. Wells, leave of absence 2 months.
Whitehead, 1st Lt. Ennis C., leave of absence 1 month 25 days.
Whiteley, 1st Lt. John F., leave of absence for 8 months and 15 days.
Whiteley, 1st Lt. John F., leave of absence for 8 months and 15 days.
Wolf, 2d Lt. Paul W., from Brooks Field, San Antonio, to Pbilippine Islands. (June 10)
Woolsey, Capt. Clinton F., from McCook Field, Dayton, O., to Canal Zone. (June 10)
Young, 2d Lt. Gerald Pomeroy, to active duty at Brooks Field, San Antonio, Tex. (June 3)
York, 1st Lt. John Y., Jr., from Scott Field, Ill., to Office of Chief of Air Serv., Wasbington, D. C. (June 12)



### THE 'WASP'



The latest Vought aircraft are being equipped with "Wasp" engines—a power plant specifically designed to meet the exacting requirements of this major airplane contractor to the United States Navy Department.

Pratt & Whitney is proud of its part in the development of these planes.

# PRATT & WHITNEY AIRCRAFT CO-

out this and formation of

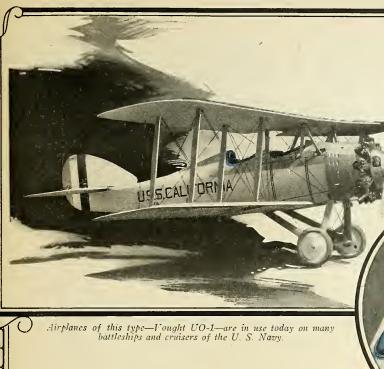
LANDING FACILITIES

MUNICIPAL FIELD AND CONNECTICUT RIVER



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ON AIRWAYS MAPS



Note how generously leather has been used in the construction of this airplane, built by the Chance Vought Corporation.

# Nothing takes the place of LEATHER

- —to furnish the utmost in comfort and luxury for passengers and pilots
- —to add richness and beauty
- —to withstand the effects of rain, sun, snow, salt water and sudden changes of temperature

Nothing takes the place of leather.

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Ten years' experience in development and production

Types and equipment to suit all requirements

A co-operative technical service at your command

#### ECLIPSE MACHINE COMPANY

HOBOKEN PLANT Hoboken, New Jersey

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### HARTZELL PROPELLERS

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### **VOUGHT AIRPLANES**

Hartzell propellers are correctly pitched to give maximum speed in level flight and high thrust for rapid climb. They are built to withstand the effects of severe service on land planes and seaplanes catapulted from the decks of battleships and scout cruisers in the United States Navy.

HARTZELL WALNUT PROPELLER CO.

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### Steel Rods Seamless Steel Tubing

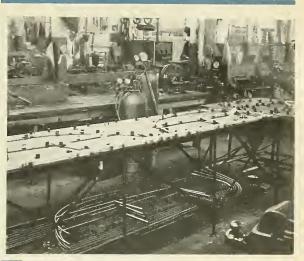
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#### PETER A. FRASSE & CO., INC.

Grand & Sullivan Sts., New York City Philadelphia Buffalo Hartford

United States Distributors for Brunton tie rods, streamline wire, fittings, etc.

Also valve spring wire as used in the Jupiter and Napier engines.



Welding department of the Chance Vought Aircraft Corporation, showing use of I. O. C. gases in welding.

### IDUSTRIAL GASES

for aircraft welding and metal working in all industries.

I. O. C. gases are used exclusively in the metal construction work in

#### **VOUGHT AIRPLANES**

Oxygen Nitrogen Hydrogen Acetylene

C. H. (cutting gas) Welding wire fluxes.

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Welding and cutting torches. Plain and armored rubber hose. Asbestos pads and paper. Goggles.

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Pioneer American manufacturers of oxygen and oxygen generating apparatus.

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Acetate Nitrate **DOPES** 

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Used by

THE
CHANCE VOUGHT CORP.
FOR 8 YEARS

Manufactured and supplied by

PERRY-AUSTEN MFG. CO.

Contractors to United States Government

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WELDED ALUMINUM PRODUCTS CO.



Manufacturers of the

### ALUMINUM FUEL TANKS

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All kinds of aircraft welding. Manufacturers of aluminum tanks for aircraft for ten years.

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NICKEL STEEL STRAIGHT CARBON CHROME MOLYBDENUM

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### MAGOSY & BUSCHER

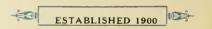
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Specialists in

Metal spinnings and hand-hammered work in all kinds of sheet metal.

Streamline fairings for wheels, metal spinners for propellers. Our products are being used by VOUGHT—CURTISS—SEVERSKY

We make to order anything in the line of sheet metal goods.



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### Metal Fittings

used on the

### Famous Vought Airplanes

are manufactured by



### SMITH-HAFECOST

INC.

129 Grand Avenue Brooklyn, N. Y.

(Also manufacturers of Liberty Motor Parts)

Our plant is fully equipped to turn out machine parts and aircraft fittings for all aircraft requirements. Specialists in

TOOLS, DIES, FIXTURES, JIGS, OF ANY INTRICATE NATURE



THE care that is taken to make Chance Vought aircraft the splendid product that it is, is well exemplified by the fact that Hartshorn Streamline wire is used for all exterior bracing. These tierods reduce drag in the surest way—by presenting less surface to the wind—yet at no sacrifice of strength.

Made according to U. S. Army and Navy specifications. Write for Circular A-1 describing these wires and end-fittings.

Alarkshipe Tie Rods

STEWART HARTSHORN CO., 250 Fifth Ave., New York

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### Wm. P. Youngs & Bros., Inc.

35th St. and First Ave., N. Y. City, N. Y. Vernon and Harris Aves., Long Island City, N. Y.

A complete stock of over 3,000,000 feet of seasoned lumber suitable for manufacturing purposes, buildings or crating.

A wide selection of choice straightgrained woods for aircraft manufacturing purposes. We also have a completely

We also have a completely equipped mill.

## We furnish CHANCE VOUGHT CORPORATION

with.

AIRCRAFT BOLTS — NUTS
TURNBUCKLES — TUBING
STEEL FITTINGS, Etc.

Used on the Highly Successful VOUGHT AIRCRAFT

May We Serve You in a Like Manner?

AERO SUPPLY MFG. CO., INC. COLLEGE POINT, LONG ISLAND, N. Y.



To meet the requirements and rigid inspection of the United States Army and Navy the builders of

### VOUGHT AIRCRAFT

specify our

Reinforcing tape

Shock absorber cord

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Radiator web

(Anti-squeak)

Manufactured by

## RUSSELL MANUFACTURING Co.

ESTABLISHED 1830-

SALES OFFICE

349 Broadway, New York

Factory: Middletown, Conn.

Manufacturers of webbing to meet Army and Navy specifications for 30 years.



I T is our experience that most of the nails used in aircraft construction are either steel nails electro-galvanized or brass nails, cement coated. May we quote on your requirements?

JOHN HASSALL, INC.

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Used in Vought Airplanes because any gasoline or fuel oil is better after being clarified by the

### BOSWORTH FILTER

Prevents fuel stoppage and eliminates all troubles due to water, dirt or other impurities in your fuel.

Manufactured of Solid Brass or Aluminum in four sizes

		Brass	Aluminum
No.	125—1/8	\$5.00.	\$7.50
No.	250—¹/4	. 7.50.	11.25
No.	375-3/8	. 10.00	15.00
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Furnished in any Mesh desired

Write today
for further particulars



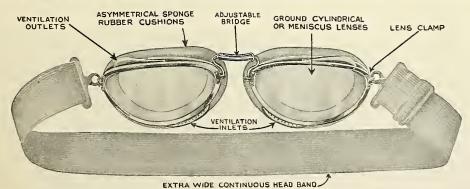
Bosworth Filter Company, Inc.
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## IN THE AIR SERVICES



### NUMBER 6 U.S. AIR SERVICE MODEL

#### ORIGINATED AND MANUFACTURED EXCLUSIVELY BY E. B. MEYROWITZ



#### NUMBER 6 U. S. AIR SERVICE "LUXOR" GOGGLE

The LUXOR No. 6 U. S. Air Service Goggle is our latest, made especially for the U. S. Air Service. Providing an unobstructed field of vision, comfortable face-fitting rubber cushions that permit continuous wearing without irritation. Fogging and steaming of lenses prevented by ventilators with dustproof inlets. Adjustable bridge insures fit and face comfort. Lenses held in place by special instantly locked metal rim, permitting quick replacement. Light metal construction and flanged eyecup rim prevent possibility of cutting face in case of accident. Extra wide continuous head band.



Write for Descriptive Circular Established 1875 INCORPORATED

520 Fifth Avenue at 43rd Street, New York City

Contractors to the U.S. Government Paris
London
Detroit
St. Paul
Minneapolis



### VOUGHT'S PRODUCTION RECORD

In the aeronautical field has been relatively moderate since the war, and the opportunities for conspicuous success in the industrial end of the business more or less restricted, the Chance Vought Corporation is an outstanding example of uniformly successful and continued aircraft manufacturing operations in the United States.

Perhaps more than any other American manufacturer Chance Vought Corporation has carried on a steady business, yearly mounting in volume, yet quite in keeping with its facilities and the growth of the aeronautical industry. The company has been the principal producer of air-cooled engined airplanes in this country, although all of its production in the immediate post-war period was equipped with water-cooled



Chance M. Vought-

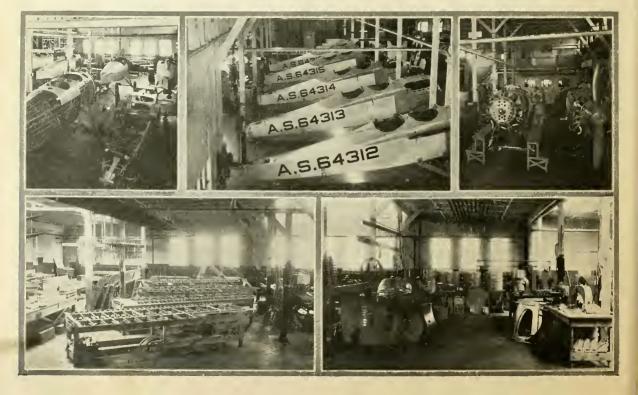
one of the few leaders of the present day aero nautical industry who is a ranking pioneer pilot, designer and constructor. Mr. Vought is one of the early Wright pilots, having started flying in 1910 on the original Wright biplanes. He is a protégé of Orville Wright, the father of heavier than air flight. (Photo taken in 1911.)

engines of the Hispano Suiza type.

The Vought organization is also outstandingly conspicuous for the advanced engineering design, stability and vogue of the models produced and developed, for its well-trained personnel and for the quality of its product. It has an unusual record for continuity of production and consistent operation. Its highly successful production has been made possible by able direction of talented personnel, by ample resources and facilities and a definite policy strictly adhered to.

By virtue of specialization, advanced design, proven performance and quality of product, the various successive Vought models have quickly established their merit and elevated the production into noncompetitive classes.

The management is constantly





The Vought UO-1 equipped with landing wheels.

The UO-1 seaplane, as used for catapulting.

making improvements in the product and in plant facilities to further increase productive capacity, and while the number of employees has remained practically constant for many years, the weekly rate of production has been steadily increased. Peak labor and peak financial loads are assiduously avoided, uniformity of operations being carefully planned and scheduled in accordance with this policy.

With the recently completed engineering building, which includes the extensive experimental department separate from all production activities, the Chance Vought Corporation continues its steady advance in production. The factory buildings are

ideally suited to their purpose. They are equipped with the most extensive and modern machinery and tools for wood-work and metalwork. Good lighting, heating and ventilation assure the best possible working conditions, and the personal pride each man takes in his work is reflected in the quality of the beautifully finished product.

After visiting the Vought factory, and witnessing the smooth workings of this efficient organization, and the intensity of the effort constantly being put forth, it is easy

to visualize the solid background upon which its success and prominence have been achieved. The entire organization functions with a precision and at a pace usually associated only with well-grounded business enterprises in the larger industrial fields, where efficient methods are followed.

The airplanes going together on the assembly line just seemed to grow while one looked on. Parts and sub-assemblies coming to the assembly division were rapidly put in place by expert workmen, everything seeming to fit to a nicety, and the larger assembled units were then moved on to final finishing and the shipping department.

The various Vought models have met with favor in a wide range of military service. In addition to being standardized for use by the U. S. Navy and the Air Service, the U. S. Army, the U. S. Coast Guard, the Cuban Air Service, and several South American countries have been recent purchasers.

Among the initial Vought production were the

Among the initial Vought production were the planes supplied to the Army Air Service in 1918. These planes of the model VE-7 design were equipped with the Hispano-Suiza type engine manufactured in this country. The first sample VE-7 airplane easily won the Army competition for advanced training airplanes and was immediately adopted and standardized by the Air Service for advanced train-

ing purposes. A number of these planes were delivered prior to the close of the World War and the type proved to be one of the most popular and widely used two-seater advance training types. Many repeat production orders were given by the government for these splendid airplanes.

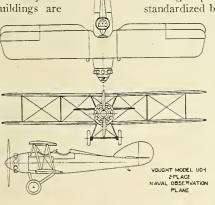
Later the model VE-9 was developed for the U. S. Navy Department and standardized for advance training and gunnery purposes. Then this type was further developed into the so-called convertible

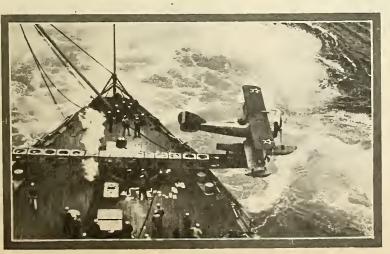
type and used as the original catapult plane equipment of the Navy for observation and gun-spotting purposes. When the U.S.S. *Langley* was put in commission it was equipped exclusively with VE-9s fitted with arresting gear for deck-landings. These planes are still in this original

service.

Following the VE-9 model, the principal production of the company has been of its model UO-1, a two-seater observation plane of the convertible type. The UO-1 was developed as the replacement type for the VE series and was then adopted by the Navy as the exclusive twoseater seaplane equipment for the new catapult-(Continued on next

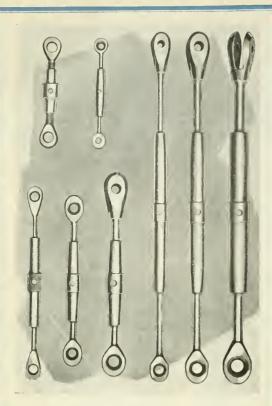
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International Newsreel.

Catapulting a Vought UO-1 from the deck of the battleship U. S. S. Tennessee.



#### Standard Automatic Products Co.

ORIGINAL MANUFACTURERS OF

STANDARD TYPE TURNBUCKLES

#### Airplane parts of merit

TURNBUCKLES
CLEVIS ENDS
CLEVIS PINS
AIRCRAFT BOLTS

(milled from bar)

Direct Contractors to
United States Army and Navy

Chance Vought and other airplane manufacturers

Standard Automatic Products Co.

Corry, Pennsylvania.

#### VOUGHT'S PRODUCTION RECORD

(Concluded from page 43)

equipped scout-cruisers and the battleships of the Navy's Fleets. It is also being used for deck-landing work on the Langley, and the U.S. Naval Reserve Air Stations have been issued UOs for advanced flight operations and special training.

Two or more UO-1s are used on each of the new scout cruisers comprising the Navy's Scouting Fleets. These new cruisers are the U.S.S. Cincinnati, Concord, Detroit, Marblehead, Memphis, Milwaukee, New York, Raleigh. Richmond and Trenton.

In addition, the fifteen first-class battleships of the Battle Fleets are each equipped with one or more UOs. These battleships are the U.S.S. Arizona, California, Colorado, Idaho, Maryland, Mississippi, Nevada, New Mexico, Oklahoma, Omaha, Pennsylvania, Tennessee, Utah, West Lirginia and Wyomina.

The general arrangement of the Vought UO-1 is shown in the accompanying line drawing. This model is equipped with the Wright J-4 "Whirlwind" air-cooled engine and has a high speed of 134 m.p.h., as a landplane, at sea level. In ten minutes it reaches an altitude of 8,600 feet. The service ceiling is 18,500 feet. Fuel is carried for a flight of four hours. The wing span is 35 feet 6 inches. Length over all, 24 feet. The overall height, 9 feet. Gap between wines, 60 inches.

In the newly expanding field of commercial aviation Vought commercial airplanes are rapidly becoming important factors. One new type is now being carefully developed, which, while characteristically Vought in design and execution, includes some interesting new developments which will go far to render commercial operation safer.

#### A Chance Vought Choice

Fourteen years experience in making

"Metal parts for aircraft" Radiator Shutters, Stream-line Covers, Wing and Fuselage Fittings, Dies, Tools, Etc.

CUSTOM - MADE PARTS ONLY

CURRAN MACHINE WORKS
32-74 47th St., Long Island City, N. Y.

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We furnish Standard

### ENGINE CONTROL ASSEMBLIES

to the

### **CHANCE VOUGHT CORPORATION**

We can make them to suit your requirements too

### THE AVON TOOL & MACHINE CO.

DAYTON, OHIO
Government Contractors

### HASKELITE IN THE UOs

Haskelite Navy Grade A waterproof plywood is used in the Chance Vought UO-1 and all other models.

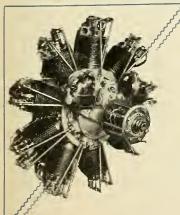
Wherever plywood is used in these planes, Haskelite is relied upon to perform the unfailing service that has established its leadership.

The merit of plywood must be measured by the strength of its glue lines. The blood albumen glue used in the manufacture of Haskelite is the only glue which will meet the wet shear specifications of the U. S. Navy for grade A waterproof plywood.

Haskelite has been awarded the U. S. Navy contract for the last 5 years and more than 85% of all the plywood used in the industry is furnished by Haskelite.

Samples and data will be sent to interested builders.

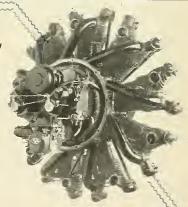
HASKELITE MANUFACTURING CORP., 133 W. Washington St., Chicago, Ill.



Wright "Whirlwind"

Pratt & Whitney

THE
FINE AIRPLANES
BUILT BY THE



CHANCE VOUGHT CORPORATION

ARE EQUIPPED WITH

SCINTILLA

AIRCRAFT MAGNETOS

SCINTILLA MAGNETO CO., INC.

SIDNEY, NEW YORK

## STANDARD STEEL

ALL METAL ADJUSTABLE PITCH

## PROPELLERS

are used on the newest

### VOUGHT AIRPLANES

The latest Vought Airplanes equipped with the new Pratt & Whitney "Wasp" engines will use adjustable-pitch all-metal

### STANDARD STEEL PROPELLERS

These modern aircraft are being fitted with the most up-to-date equipment to assure continuation of the success of all Vought products.

STANDARD STEEL PROPELLER COMPANY

PITTSBURGH PENNA

Contractors to U. S. Army, Navy and Air Mail



Catapulting a Vought UO-1 from U. S. S. Pennsylvania.

© Int'l.

### IN THE NATION'S DEFENSE

#### CATAPULT PLANES

The standard catapult airplane equipment of all the Scout Cruisers and Battleships of the U.S. Navy Fleets are Vought UOs.

#### CARRIER PLANES

The regular aircraft equipment of the U.S.S. "Langley", since commissioning, has been Vought VE-9s and UOs.



CHANCE VOUGHT CORPORATION, LONG ISLAND CITY N.Y.

### NEWS OF THE N.A.A.

#### AKRON

A KRON, Ohio, is the center of lighter-than-air manufacturing activities of the country and has been much interested in several items of news that have come out this past month.

First was the victory of W. T. Van Orman and W. W. Morton in the International Balloon Race at Antwerp which brings this event to America for next year.

Second was the passage by the Senate of the Army Aviation Bill giving discretion to the Secretary of War to buy as many balloons and airships as he finds necessary for training purposes.

Third was the passage by the Senate of the Navy Appropriation Bill setting up a five-year program in lighter-than-air as well as heavier-than-air, including the construction of two super-airships each three times the size of the Shenandoah.

It is anticipated that some of these ships will be built in Akron and a movement has been instituted by the Akron chapter to make this the occasion for acquiring a large airport for the city so that Akron will be ready to meet any requirements in the immediate future.

Simultaneously a movement is on foot to make a bid for the 1927 balloon races, and to make a city-wide celebration over the home coming of Van Orman and Morton and also of J. S. Boettner and Herburt Maxson who piloted the Akron chapter balloon in the race out of Antwerp.

#### PARIS, FRANCE

W ADE T. VAN ORMAN and Walter W. Morton, winner of the 1926 Gordon Bennett cup race, were presented with special medals by the Paris chapter on June 15. The balloonists won the international race by flying from Belgium to the southern coast of Sweden, a distance of slightly more than 500 miles. The ceremony in their honor preceded an elaborate banquet.

#### SOUTHERN CALIFORNIA

CHARLES HARDING BABB, secretary of the Southern California chapter, recently called a meeting composed of the executive heads of the various aero organizations in the surrounding area, such as the N. A. A., Long Beach Aero Club, Brea Air Club, Santa Ana Aero Club, Western Aero League and The Professional Pilots Association, with the idea in view of coördinating their activities and acting as an aeronautic clearing house on any problems that may arise.

It was agreed that all would unite in putting on an annual Pacific Coast Classic once a year and discourage small air meets with a view to building up one worth-while air meet that the industry could look forward to and depend upon. Also, the prizes for this meet should be of sufficient worth so that manufacturers would be interested in building special ships for it.

One of the subjects discussed was the forthcoming "World Flight" Commemoration meet. Tentative plans for this meet, which is to be held about the first of October, call for a take-off at Santa Monica, touching at Long Beach, Santa Ana, Corona, San Bernardino and back to Clover Field, Santa Monica

#### SAN FRANCISCO

THE San Francisco chapter and the Aerial Affairs committee of the Chamber of Commerce have been successful in their efforts to obtain an airport for San Francisco. The Supervisors of the city have provided for the sum of \$100,000 from this year's city budget to be used to acquire a city airport.

The location, which will be decided upon in the near future, will probably be either at Hunter's Point or in South San Francisco. The former is eleven minutes from the heart of the city and the latter thirty minutes by automobile



The Paris Chapter after a luncheon given for the American Air Attaché.

to right, top row: D. McCoy, Prince M. D. Viani, R. P. Price, W. S. Hogan, R. C. Wo.
M. Bullwinkle, H. H. Kelly, C. G. Jerosch, H. J. Loob, M. Verdurand and Parker Watt. Bottom Ro.
D. Harper, Major Yount, American Air Attaché, S. B. Veit, M. Bardel, F. S. Lahn, C. D. Harm.
Dr. Veit and C. J. Warren.

#### DENVER

THE Denver chapter is working with the Colorado Semi-centennial Golden Jubi-lee Committee in its celebration of Colorado's fiftieth birthday of statehood.

In connection with the celebration a National Mile High Air Meet is to be held at Lowry Field, Denver, on August 1, 2 and 3.

This meet is particularly interesting for the reason that it is to be held at a mile high altitude, and is believed to be the first of its kind in history.

Cash prizes amounting to \$5,000 are to be distributed to aircraft manufacturers, commercial and army flyers, and concessions are arranged for visiting aviators.

Any information desired regarding the celebration can be had by addressing: Captain Bruce Kistler, Secretary Denver Chapter N. A. A., Kistler Building, Denver, Colorado.

#### SEATTLE

VALENTINE GEPHART, Governor of the Association for the State of Washington, reports the formation of a chapter under way in Seattle. An enthusiastic meeting held resulted in the election of the following officers: president, A. S. Eldridge; vice-president, Frank Fretwell; secretary, Valentine Gephart; treasurer, Raymond Sharp.

#### DISTRICT OF COLUMBIA

THE members of the District of Columbia chapter attended the Curtiss Marine Trophy Race held on May 14, at the Naval Air Station, Anacostia, D. C., in lieu of a regular May meeting.

The race was preceded by a series of airplane demonstrations by Army and Navy service pilots that went forward smoothly on schedule and held the interest of all spectators. The laying of a smoke screen gave a picturesque setting and seven parachute jumps made to mark lent a climax to the thrills,

#### **COMING EVENTS**

FOLLOWING are the International and American National events scheduled thus far:

July 2-4—International contest for Zenith Cup, France.

July 10-15—International contest for touring and school seaplanes for Coppa del Mare, Italy.

Aug. 2-Aerial Derby, Great Britain.

Aug. 13-21—International meeting at Zurich, Switzerland,

Sept. 4-11—National Air Races at Sesquicentennial Exposition, Philadelphia.

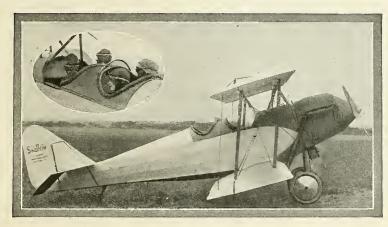
Oct. 10-15—International contest for transport seaplanes for Coupe du Comm't de Pinedo, Italy.

Oct. 24-28—Schneider International Seaplane Race, Norfolk, Va.

# SThe 11 Super OW

The greatest value in Commercial Aircraft

Seats four people



Reenforced steel fuselage

Increased Climb

**Greater Speed** 

Four ailerons insure ease of control
Streamline wires reduce parasite
resistance to a minimum

\$2750 at our field

Write or wire for delivery dates

SWALLOW AIRPLANE MANUFACTURING CO.

WICHITA, KANSAS

# WITH the INDUSTRY

### GOVERNMENT AND INDUSTRY CONFER

A JOINT conference of the subcommittee on aerodynamics of the National Advisory Committee for Aeronautics with representatives of aircraft manufacturers and operators was held on May 24, at the laboratory of the National Advisory Committee, the Langley Memorial Aeronautical Laboratory, at Langley Field, Virginia.

Although the visiting representatives of the industry were familiar in a general way with the work of the Committee, several expressed surprise at the number and character of the problems under investigation at the Committee's laboratory, the exceptional facilities available, and the unique method employed in the scientific study of the fundamental problems of flight. After being shown the work in progress, they were invited to submit suggestions for new investigations to be undertaken by the Committee with particular reference to anticipating the needs in connection with the development of commercial aircraft.

There were many expressions of gratification on the part of the representatives of the industry and of hope that much progress would result from the conference and that similar conferences would be held in the future to which representatives of the entire industry, including engine and accessory manufacturers would be invited. The following is a list of the representatives of the manufacturers and operators present:

Aircraft Development Corporation—H. V. Thaden and W. A. Klidoff; Curtiss Aeroplane and Motor Company—T. P. Wright and Temple N. Joyce; Fairchild Aviation Corporation—Capt. A. E. Nesbitt; Goodyeain: Charles Ward Hall, Inc.—Charles Ward Hall, Inc.—Charles Ward Hall and Charles F. Pape; Johnson Airplane and Supply Company—E. A. Johnson; Pitcairn Aviation—H. F. Pitcairn, Robert W.

Brewer, Agnew E. Larsen, and James G. Ray; Stout Air Services, Inc.—W. B. Stout; Wright Aeronautical Corporation—Charles L. Lawrence and E. T. Jones.

### COMMERCIAL AIRPLANE RELIABILITY TOUR

O N August seventh, nearly fifty planes of all types, ranging from the new twelve-passenger, three-engined, Ford airliner down to the little, one man, twenty-eight horsepower, sport Powell plane, will take off from Detroit, Michigan, on the Commercial Airplane Reliability Tour of 1926, making a 2,000-mile circuit of the Middle West. Allowing for twenty-four hour stop-overs in twelve large cities, the Tour will return to Detroit two weeks later, on August 21

To date thirty machines have been entered by sixteen manufacturers and a number of others have signified their intention of entering if they can possibly prepare for it.

In the whole realm of aerial competition there is nothing comparable to this great tour as a practical proving ground for the latest commercial planes. The Commercial Airplane Reliability Tour fully justifies its name. Reliability and efficiency in commercial operation are the two standards, and a formula has been evolved this year to promote those objectives as effectively as possible. The tour was originated in 1925 to produce the following results:

- 1. To directly stimulate efficient and economical designs in aircraft.
- 2. To furnish a wide potential market for manufacturers of airplanes.
- 3. To encourage the development of landing fields in the various cities visited.
- 4. To provide the greatest amount of publicity at the lowest possible cost to the individual manufacturers.
- 5. To convince the public of the practicability and reliability of modern airplane travel

Just how effective the tour was last year in achieving these results was ably demonstrated when seventeen planes took off from Detroit on a 2,000-mile jaunt, encountered the worst possible weather squalls, severe rainstorms and high winds, returned safely to Detroit and landed in a heavy mist and rainstorm. A veritable triumph for our modern commercial machine.

The Edsel B. Ford Trophy was recently completed and is now on display in the offices of the Ford Motor Company at Dearborn, Michigan. In addition to this desirable trophy, the general committee of the tour has decided to award a total of \$20,000 in cash prizes to be distributed as equitably as possible by the contest committee among the various entrants. In addition to this special inducement, the various cities on the tour will award cash prizes to the winner of each lap leading up to each individual city, making a grand total of \$30,000 in prizes. This, together with the provision of free gas and oil for the ships, entertainment of pilots on the tour, enables any manufacturer so desiring to enter at practically no cost

Owing to the fact that a number of multimotored planes will be entered in the 1926 Tour, it was deemed advisable to create two distinctions, viz., a single-motored and a multimotored class. Under this classification the trophy will be retained for half the year by the winner of each class. Inasmuch as no definite attempt was made last year to secure a winner for the trophy, each airplane that finished the first year's tour with perfect score; will have the name of its entrants and pilot engraved on the trophy and will count as one leg in its class toward permanent possession.

The following cities have been included on the tentative schedule: Detroit, Chicago, Milwaukee, Twin Cities. Des Moines, Lincoln, St. Joseph, Wichita, Kansas City, Monmouth (Illinois), Indianapolis, Cincinnati, Fort Wayne and Detroit.





RADIO WRIGHT AERO CORPORATION

PATERSON NJ

WRIGHT MOTORS FUNCTIONED PERFECTLY ON SIXTEEN HOUR POLAR FLIGHT

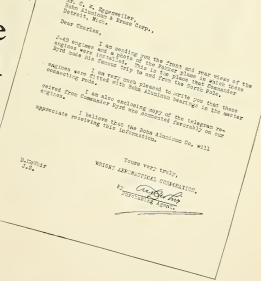
DIDNT MISS A REVOLUTION AND IS GREAT MOTOR.



### Bohn Ring True Bearings picked for Supreme Test

Because of the great responsibility of bearings in any engine—we are especially proud that Bohn Ring True Bearings were picked for this supreme test of aviation design.





Bohn Products include Ring True Bearings — Bohnalite Castings, both permanent mold and sand, Nelson Bohnalite pistons; we also supply the government with replacement pistons and bearings for the Liberty engine.

BOHN ALUMINUM & BRASS CORPORATION EAST GRAND BOULEVARD, DETROIT

#### NEW ENGLAND NEWS

By DANIEL ROCHFORD

NEW England's most conspicuous aero-nautical event of the month was, of course the commercial air mail opening from Boston and Hartford on July first. Colonial Air Transport, Inc., have had traffic men active in Boston, Hartford, and New York for several months. The Boston Chamber of Commerce organized a volunteer committee to call on executives for air mail business. The manufacturers' association of Connecticut had canvassed the leading industries of that state. Governor John H. Trumbull of Connecticut, a rabid aviation fan and the only state governor who flies regularly himself and handles the ship in the air, assisted by Major Talbot O. Freeman, are the big guns in the air mail at Hartford, W. Irving Bullard is Boston's keystone man.

One of the features of the month past was the completion of three hundred hours of flying without overhaul of a Wright Whirlwind motor in a UO Vought seaplane by Lieutenant Reginald D. Thomas, commanding officer at the United States Naval Reserve Air Station at Squantum.

Service flyers from Boston turned the corner into the heavy summer flying characteristic of New England's sons of the air, when in the second week of June they totalled more than one hundred aircraft hours.

Pilot A. K. Billings from the Travel Air factory at Wichita came to Boston early in June to be resident pilot for the Boston Airport Corporation, replacing "Serious Cyrious" Caldwell who has joined the editorial staff of Aero Digest and will do his flying hereafter from a New York base.

The Naval Reserve primary flying course has been under way a fortnight at Squantum, Students from Harvard and Tech are learning the fundamentals of motors, design and flying. Each student who makes good in the course totals about twenty hours flying time handling his own ship before the end of the six weeks' course here. On completion at Squantum graduates are sent to Hampton Roads for the advanced course of six weeks and their commissions in the reserve.

A. G. "Blooie" Bleau who a few years back was mechanic with the Curtiss Company at Saugus, Mass., is now flying his own commercial ship from Hartford, Conn.

Saugus has joined the list of air-marked towns through the efforts of Sergeant Harry J. Jenkins of the air service enlisted reserves who lives there and writes a local aviation column in the Sagus Herald. Jenkins persuaded the Cliftondale Woodworking Company to have the town name painted in great white letters on the roof of their large warehouse with an arrow pointing north.

The 445th Reserve Squadron operating out of Boston under Captain Bartlett Beaman, has made cross-country formations every Saturday the past six weeks with as many as five planes. The reservists, many of them, had had no chance at formation flying since the war, until this new reserve group was formed. The actual flying officers were pulled out of the different paper skeleton

squadrons and organized in the 445th. Captain Christopher W. Ford, assistant Corps Area Air Officer, is in charge of the reserves and has official letters of congratulation and a commendation on his having organized an actual active reserve group, from the Municipal Air Board of Boston, the National Acronautic Association and the press of New England.

### FRANCE ORGANIZES INTERNATIONAL MEET

THE Association Française Aerienne, under the patronage of M. Laurent-Eynac, French under-Secretary of State for aeronautics, has organized an international competition for military and commercial airplanes, giving 150,000 frances as prizes.

This meet will take place from the 9th to the 15th of August, 1926, on an aerodrome near Paris, France.

Entries have been made from Belgium, Great Britain, Italy, Holland, Czechoslovakia and France.

The different tests for the competitors have been planned with the object of making comparison in value of practical qualities of small airplanes for training military and civilian pilots, also for aerial tours.

Copies of regulations of this competition may be obtained from the Secretary General of the Association Française Aerienne, 40, Quai des Celestine, Paris, France.

### FLY AT OPENING OF SESQUICENTENNIAL

JAMES G. RAY, operations manager of Piteairn Aviation, Inc., was pilot of a Piteairn-made ship which flew over the Philadelphia stadium during the opening exercises of the Sesquicentennial Exhibition on May 31.

Bob Hewitt, of the Ludington Exhibition Company, Harold F. Pitcairn and Ben Faulkner, of Pitcairn Aviation, Inc., also took part in the flying program in connection with the opening exercises.

Before Mayor W. Freeland Kendrick and Secretaries Hoover and Kellogg pronounced the dedication words, the Pitcairn pilot rained American Beauty roses from the skies into the center of the Stadium.

### LT. McCARTHY JOINS VOUGHT ORGANIZATION

LIEUT. C. J. McCARTHY recently resigned from the U. S. Navy to join the Chance Vought Corporation, as head of its expanded Engineering Department.

Lieut. McCarthy is a graduate of Massachusetts Institute of Technology, and is well-known for his aeronautical engineering activities, having become actively identified with aeronautics during the war.

After graduation from M. I. T., he became an instructor at that institution for a considerable period, and then early in the war he entered the government service in a civilian capacity in the Aviation Section of the Bureau of Construction and Repair. Later he enrolled in the Naval Reserve Force and

subsequently was commissioned a Lieutenant in the Construction Corps of the Navy. He had an active part in the design of the Navy's NC flying-hoats which made the first transatlantic flight, and assisted in the final preparations for the flight at Trepassey Bay, Newfoundland, flying from Rockaway to Trepassey on the NC-1.

He was then ordered to the Navy Department, Washington, D. C., and placed in charge of the Structures Sub-section of the Design Division of the Bureau of Construction and Repair, Aviation Section; continuing on these duties in the new Bureau of Aeronautics when that Bureau was created.

In November, 1925, Licut. McCarthy was assigned to duty at the Naval Aircraft Factory in Philadelphia, as Assistant Shop Superintendent, and remained there until his recent resignation to go with Vought.

Lieut. McCarthy retains his interest in Naval aeronautics through the Naval Aviation Reserve, in which he has been commissioned a Lieutenant.

#### AIR MAIL BIDS ASKED

PROPOSALS have been invited for the operation of a contract air mail route as follows:

Detroit, Mich., to Grand Rapids, Mich., and return, with such intermediate stops as may be agreed upon later. Distance 142 miles each way.

The route is open to bidders regardless of residence, and bids will be received at the Post Office Department in Washington until noon of July 26, 1926.

Mail will be carried on a weight instead of a count basis on this route.

### FIRST AVIATION CHART FOR SEAPLANES

THE first aviation chart for use of seaplanes has been issued by the Hydrographic office of the Navy Department covering the route between Washington, Baltimore and Norfolk.

On the border of the chart are shown halftone pictures of the principal landing fields and lighthouses along the route. Buoys and other aids to navigation are also plainly chartered, the important points being designated in colors.

Similar charts will be constructed for all the coasts of the United States and outlying possessions

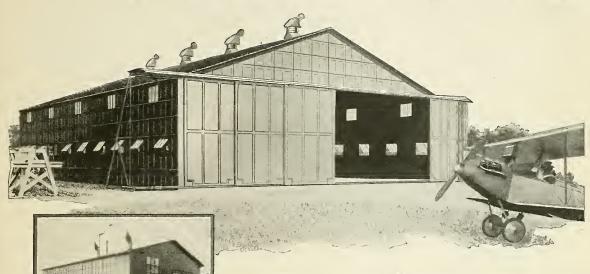
#### A CITY FOR AIRMEN

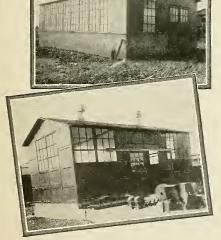
JUST west of the city of Racine, Wisconsin and adjoining the village of Sturtevant, on an airline between Chicago and Milwaukee, Dr. George L. Ross is building what is believed to be the first "air city."

Air City is 160 acres square, and will be provided with hangars, shops, and aircraft supplies. There will be bungalows, offices and stores to supply the airmen's living necessities.

It has been planned entirely for the encouragement and development of aviation, and all air-minded are invited to enjoy this air center.

### Permanent Steel Buildings For All Air-Port Needs





Truscon Buildings assure firesafety with economy. Types to answer any requirement can be furnished. Truscon Engineers gladly cooperate with you.

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England's largest commercial flying boat-the Supermarine with Napier engines.

#### BRITAIN'S LARGEST FLY-ING BOAT TESTED

ON June 10, at Southampton, the largest British commercial flying boat successfully completed its first trials before being handed over to Imperial Airways.

This machine, a huge Supermarine-Napier flying boat built by the Supermarine Aviation Works and piloted by Capt. H. C. Biard carried its full complement of passengers, mostly ladies, who expressed great satisfaction with this experience.

In addition to the pilot and navigator this yacht of the skies seats 10 passengers and also carries a load of 700 pounds of baggage or mail

The hull is used entirely for passenger accommodation, that is to say there are no gasoline tanks or controls in the cabin, which is constructed on the lines of a yacht, The passengers enter from the main deck into the hull by a companion ladder.

The cabin itself is particularly roomy, passengers being able to move freely. It is well upholstered and padded all around, with a porthole to every passenger seat.

The pilot and navigator are situated in a specially built cabin on top of the hull.

The machine has a wing span of 70 ft. and its height from the sea is approximately 24 ft. It has a cruising speed of 90 m.p.h. with a maximum of 108 m.p.h., and is fitted with two 450 h.p. Napier aero engines.

#### NATIONAL AIR RACES

R ULES for the National Air Races to be held at the Model Farms flying field, Philadelphia, from September 4th to 11th, have been issued by the Sesquicentennial Aviation Committee. They may be obtained from the air race headquarters, Room 819, Atlantic Building, Philadelphia.

The program includes nineteen contests with cash prizes aggregating \$30,000. The "On to the Sesqui" race carries cash prizes of \$4,000 and the winner receives the Sesquicentennial Trophy. There are three races for light airplanes with engine piston displacement of 510 cu. in. or less. The first two of these races are elimination contests, each with \$1,250 in prizes. Those who place in each race may compete in the third race for \$2,000 in money prizes, the winner to be the permanent possessor of the Aero Club of Pennsylvania Trophy.

The race for pilots and machines of any National Guard of the United States carries \$1,000 in cash prizes and a trophy offered by C. T. Ludington, which will he-

come the permanent possession of the winner. The air transport and speed efficiency race for the Detroit *News* Trophy and \$2,500 in cash prizes is designed to bring together in a reasonable test all commercial planes with a speed of 80 miles an hour or more, and at least 1,000 pounds pay load capacity.

The speed trophy given by Aero Digest will be competed for in the speed and efficiency race for light airplanes having a piston displacement of 80 cubic inches or less. As in the 1925 races, the winner of the Aero Digest Cup will be the permanent possessor of it. The efficiency trophy for this race, called the "Betsy Ross" Trophy is to be given by Jacob Reed's Sons of Philadelphia, also as a permanent possession. This race will also pay \$2,000 in cash prizes.

The free-for-all pursuit ship race is open to military or naval planes of the pursuit type, owned by this or foreign governments and piloted by service men. A trophy is offered by the Rotary Club of Kansas City, Mo., and will be the permanent possession of the winner. Individual trophies will be awarded to the first four pilots finishing the race. Similar trophy awards will be made to the pilots winning first, second, third and fourth place in the John L. Mitchell trophy race, the closed event for pilots of the First Pursuit Group.

There are two relay races for civilians, each bearing prizes totalling \$1,000, the winner of the first to be awarded a trophy from the B. B. T. Corporation of America, and the winner of the second to receive the "Benjamin Franklin" Trophy offered by Joseph A. Steinmetz.

Among other trophies reflecting the great names or places in Revolutionary history are the "Independence Hall" Trophy in the freefor-all race for two, three and four place airplanes, donated by Bailey, Banks and Biddle Company of Philadelphia, with cash prizes of \$2,500. Another is the "Valley Forge" Trophy offered by Dr. Thomas E. Eldridge, one of the pioneer aviation enthusiasts of Philadelphia. This is for the winner of a special precision landing contest. The "Liberty Bell" Trophy has been donated by the John Wanamaker store, Philadelphia, to the winner of the race for large capacity military planes, with individual trophies for the first four to finish.

Other contests include the model airplane race with \$500 in cash prizes and the Mulvihill Trophy; the sport plane race for civilians, with \$1,500 in cash prizes and the Scientific American Trophy; the civilian race for light planes with \$1,500 in prizes

and the Dayton Daily News Trophy; the light commercial speed and efficiency race with \$2,500 in cash prizes and the Aviation Town and Country Club of Detroit Trophy; the race for observation type two-place military planes with the Liberty Engine Builders' Trophy and individual trophies for the first four who finish.

#### VOUGHT PLANES TO BE MANUFACTURED ABROAD

GEORGE W. VOUGHT, president of the Chance Vought Corporation, one of the large producers of aircraft in the United States, recently sailed on the S. S. Leviathan of the U. S. Lines, to close negotiations with one of the principal manufacturers of aircraft in Europe for the production of a series of commercial multi-engined airplanes to new designs of Chance Vought, the designer of numerous airplanes widely used by the U. S. Navy and Army Air Services.

When these negotiations have been completed, Mr. Vought will make an extended aerial tour over the principal air lines now operating abroad. This aerial tour is being arranged by Imperial Airways, Ltd., one of the leading English commercial airlines, and will include visits to a number of English and Continental aircraft and aeronautical engine factories.

#### W. RYAN MANAGER OF SMITH-HAFECOST

A NNOUNCEMENT has recently been made that W. Ryan has been appointed general manager in charge of the Smith-Hafecost plant at Brooklyn, New York, manufacturers of aircraft fittings, engine parts, etc.

This company is the manufacturer of parts of many of the best-known and most widely used airplanes in this country, including Vought and Curtiss ships. One of their interesting products was the building of the wheels of the 1925 Curtiss racers out of solid steel. They were equipped with an ingenious shock absorber consisting of a lateral spring wound around the hub of the wheel.

#### CAIRO-CAPE-CAIRO R. A. F. FLIGHT

O N May 28 the survey flight from Cairo to Cape Town, Africa, and back, was completed by the machines of the Royal Air Force for the British Air Ministry. It was the first occasion on which a formation of machines had flown over that particular route. The distance was 10.578 miles.

That the flight was carried out to program is a striking testimony to the reliability and efficiency of the British machines and engines, as there can be no doubt that when four machines are flying the question of luck cannot enter into the successful completion of such a long and arduous flight.

The continued confidence held in the water-cooled engine by the British Air Ministry, is proved by the fact that for this long flight in tropical climates, demonstrating R. A. F. efficiency, the water-cooled Napier Lion engine was selected.



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Beacons Boundary Lights Field Lights Transformers Wire and Cable Your airport will be fully equipped for commercial aviation only when it is correctly lighted for night flying. G-E Aviation Lighting Specialists will help you select a lighting system that will aid in establishing your airport as a commercial center.

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GENERAL ELECTRIC

# Protector Goggles

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Extra wide head band Patented ventilation prevents dust and fogging

Adjustable bridge cannot get loose

Ground cylindrical lenses

Large rubber cushions

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\$7.50

With tinted lenses, 50 cents extra
IN HANDSOME GENUINE COWHIDE LEATHER CASE

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#### Noted for its wonderful performance

It has

SPEED FAST CLIMB

QUICK TAKE OFF

RESERVE POWER
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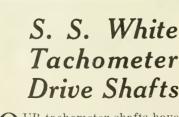
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Equipped with the improved Salmson motor which carries a 90-day guarantee, or either the Wright J-4 or 180 Hisso motors.

We still have some available territory for distributors. Write for information.

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O UR tachometer shafts have been subjected to the severest tests and have always met every task demanded of them. Built to U. S. Government specifications, of correct design, unsurpassed workmanship and the finest materials obtainable.

We supply them to the U. S. Army and Navy.

The S. S. White Dental Mfg. Co. for many years has manufactured superior flexible steel wire shafts for every industrial purpose.

All lengths carried in stock. Samples furnished to responsible manufacturers.

### The S.S. White Dental Mfg. Co.

Industrial Division

152 West 42d Street, New York, N. Y.

#### AIR BOMBING

(Continued from page 12)

under the airplane, roughly 5,000 feet, before it hits the ground, a distance which one is at a loss to guess within hundreds of feet error over or short. Due to air resistance, the bomb loses some of that forward speed and trails behind the airplane some hundreds of feet which alone the bomber cannot guess, even if this distance did not vary with his speed through the air, with the wind, the type of bomb and the altitude. So, these four factors are set into the calculating sight, which automatically sets the telescope at the proper angle and when this intersects the target, the bomber releases the bombs, not knowing what the distance is. The instrument calculates his speed over the ground, for he does not know what the wind is and he may be traveling with it, against it or crosswise.

We venture to say that many believe the pilot merely has to "fly vertically over the target." It is already apparent that the bomb must be dropped long before he reaches the target, though headed toward it, for the bomb will fall in the direction the airplane is traveling over the ground. You ask if the wind does not blow the bomb off that course? In effect it does, as the bomb lags in the direction over the ground cross-wind. Thus, the bomb's path is warped to leeward, not so far as usually supposed, yet from high altitudes, a considerably distance. So the modern instrument automatically directs the pilot to windward of the target by that amount. It may be interesting to know that even as low as 5.000 feet the best of pilots can easily misjudge what is vertically below them by 500 feet and more, for the simple reason that 5 degrees out of vertical below is about the least one can sense from an airplane. Again, the airplane even in the calmest weather is always rolling and pitching about 2 degrees at 15 to 20 second periods, and in rough weather 5 degrees or more in unexpected bumps, so the instrument must be stabilized to prevent the telescope partaking of these motions. The gyroscope comes to our aid with the remarkable accuracy of better than ½ degree, averaging much less in actual results.

While results from low altitudes, as below 5,000 feet, depend more upon skill than on the instrument, because all the errors are relatively small and the time is short for sighting, at higher altitudes, 10,000 to 20,000 feet, bombing takes on a quite different aspect. Here a small angular error subtends great distances on the ground, and estimation becomes futile in matters of thousands of feet range so that results depend almost entirely upon the accuracy of the instrument.

How accurate is bombing? The bombing enthusiast who says, "a man who cannot register 80 per cent hits should be sent back for further training" is as wrong as the artillery expert who answers, "3 per cent bomb hits is an optimistic expectation." Both are right, as one who tells you he weighs 75 and 165 at the same time, merely omitting to say kilograms in the one case and pounds in the other. A comparatively unskilled man can register eight hits out of ten on a 500 to 100 ft. target from 2,000 feet altitude with a not very accurate wartime sight, whose known defects preclude any expectation of 3 per cent hits on the same target with any kind of skill from 10,000 feet. Thus, if we fail to mention the target or the distance or the type of instrument, percentages mean nothing. If all the conditions are stated, then a percentage, which represents a large group of shots, gives directly the probability of a hit on the target, and at the altitude and with the instrument specified. The distribution of shots and the shape of a group seem to be a fairly definite characteristic of the instrument so that by enlarging or reducing the size of such a group on the basis of the known variation according to altitude, we may superimpose any target in question and tell very closely what the percentage would be for any given height and target. Analyzing many groups we find that the average bombing error increases not, as commonly supposed, in direct proportion to height, but nearly as the square root, which is to say that a group from 5,000 feet having 60 feet average radial error, would be enlarged from 10,000 feet to an average radius, not doubled, but about 85 feet or less than 1½ times. From 20,000 feet or four times the altitude, the error will be about doubled.

The following significant figures are all comparable, as they represent actual groups reduced to the same size target, a 500 ft. ship taken for comparison, and enlarged

to the same altitude, 1,000 feet.

TARGET FIXED TARGET MOVING
Old wartime instrument, 15% hit's, ? (estimated 3%).
New Air Service Instru-

ment, 62% hits, 59% hits.

What constitutes a hit? If no shots were counted hits, in a rifle match, which did not hit the exact center of the bullseye, there would obviously be no score nor any way of expressing relative accuracy. The bullseye itself may be ½-inch across, within which any shot scores 100, those further out, 80, etc., so that relative accuracy is really measured by average radial error, or average distance from the center of a large group of shots. So with bombing, a hit may be called effective if it hits a ship, or, since its destructive effect extends beyond the actual point of impact, the effective size of the target is enlarged by 30 to 50 feet all around. A large factory may take several bombs to destroy it completely, whereas a ship will be put out of action by one 2,000-lb. bomb striking anywhere on or within several feet of it. Bombs by their terrific concussive effect over considerably area need find their mark with less accuracy than any other missile

"Probability" has already been mentioned as a percentage or ratio of actualities to the total number of possibilities. Thus a probability of .80 means 8 out of 10 or, 80 out of 100. You may throw a coin 100 times and get 48 heads and 52 tails or even a wider difference, yet the more times you try it the nearer to half and half becomes the result. To state that the probability of throwing a head in one toss of the coin is .50 does not mean that the single event can be foretold, but the strange thing about it is that probability follows a law, in the long run, just as exact as 2 plus 2 equals 4. The sources of errors of projectiles are known, and instrumental errors can be calculated very closely, but there are also personal errors and smaller indeterminate ones, making the mathematical solution of probability too indefinite. We may then take recourse to the "empirical" method which has the advantages, from actual results, that it leaves little doubt. The whole insurance business is taking no chances, though any one individual is just as impossible to forecast as heads or tails in one throw. Thus when we state that the probability of hitting a given objective is .60, we do not know whether six hits will occur out of ten trials or two hits or nine, but we do know that out of a large number of shots the proportion will be close to 60 per cent, where another instrument may as certainly produce say 20 per cent.

Can anti-aircraft prevent bombing? Bombing can now strike comparatively small objects from 15,000 to 20,000 feet if need be, where the bomber is intermittently or completely invisible to ground anti-aircraft, with greater accuracy than wartime, instruments could produce at half

(Concluded on page 75)



### Test tubes and tanks

To fulfill the promise of Uniform Quality—Best Results.

That's the reason each step in the process of making Socony Gasoline is the careful work of 52 years of experience.

From the time the crude oil starts through the refinery tests and comparisons are continually made until the Socony chemists are fully satisfied that the product is up to their standard—good enough to be called Socony.

And that is why Socony Aviation Gasoline is of the same high uniform quality that has so long been identified with Socony Motor Gasoline.

Everywhere in Soconyland— Uniform in Quality—Best in Results.

STANDARD OIL CO. OF NEW YORK

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Gasoline & Motor Oil

### FIRST INSTALLATION OF "WASP" ENGINE

THE first installation of the new Pratt & Whitney "Wasp" radial engine in an airplane was recently completed by the Chance Vought Corporation in the Model WF-1 plane.

The plane was delivered to the Navy Department for flight tests at the Naval Air Station, Anacostia, D. C., where some remarkable performances were obtained, exceeding the high speed, climb, and maneuverability of the present standard service types of water-cooled pursuit planes, according to announcement of officials of the Bureau of Aeronautics, U. S. Navy Department.

One of the most noteworthy characteristics of this new engine, in contrast with previous radial engine design, is the cleanliness and oil tightness. The plane was flowduring a week's test without ejecting or leaking any lubricant, in spite of the fact that short stub exhaust pipes were used in place of the exhaust collector pipe. Neither plane nor the enclosed engine required cleaning or washing down and the pilots who flew the ship expressed great satisfaction over their new experience with air-cooled radials free from oil and soot.

#### M. I. T. DIRECTORS

A T a meeting of the Board of Directors of Massachusetts Institute of Technology recently, Paul W. Litchfield, '96, president of the Goodyear Tire & Rubber



Installation of Pratt & Whitney "Wasp" engine by the Vought Company.

Company, Alfred P. Sloan, Jr., '95, president of General Motors, and John R. Macomber, '97, president of Harris Forbes & Company, were elected members for a five-year term.

In addition to these three men, it happens that Gerard B. Swope, '95, president of General Electric Company, Irenee Du-Pont, '97, former president of the DuPont Company, and Roger Babson, the famous business economist, were students at Tech at the same time.

### UNFAIR TO WRIGHT WHIRLWIND ENGINES

NEWS stories have been appearing in the daily press, stating that sufficient power could not be developed by the Wright Whirlwind engines used in the Detroit Arctic Expedition plane. Investigations by the Wright engineers showed that automobile gasoline of an inferior quality was being used, instead of aviation gasoline. With the automobile gasoline, the engines only developed 1500 in the air, whereas filled with aviation gas, they developed up to 1600 on the ground.

### LINCOLN CO. REPORTS GOOD BUSINESS

THAT the aeronautical industry is expanding rapidly is attested to by the encouraging reports received daily in the Aero Digest office.

Within two weeks' time, during the past month, the Lincoln Standard Aircraft Company of Lincoln, Nebraska, completed six planes which were delivered in the following states: Texas, Louisiana, Iowa, Nebraska, and Colorado. One foreign shipment to Nicaragua was made.

The development of their new 80-acre aviation field is progressing rapidly. One hangar, 50 x 60, is now finished; another one, 60 x 120, also gas station, club house and café have been started. Their field promises to be one of the best equipped in the Middle West.

### DECATUR AIRPORT

DECATUR, ILLINOIS

A Class AA field of seventy-seven acres, marked to meet the Air Service specifications, equipped with hangars, shops and stockroom, day or night service with living facilities, transportation and phone available.

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### The Decatur Aircraft Company

Builders of Commercial Aircraft

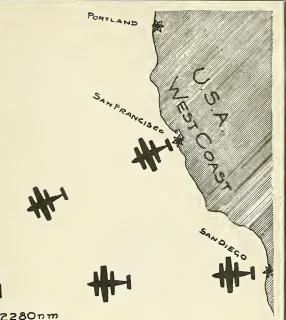
Standards,
(2, 3 and 5-place)
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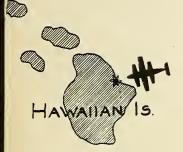
STUDENT TRAINING under ex-army instructors \$150.

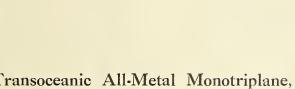
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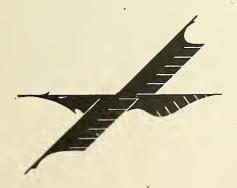
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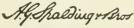
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"""" BOOKS"

#### DICTIONARY OF AVIATION

By Robert Morris Pieroe. 4278 Words and Phrases. Aeronauties and Mechanical Filint: Balloons. Atrohlas. Aeronauties. Heliconters. Ornsthopters. Kilres. Motors. Ovroscopes; Natural Filight: Wilnes and Tails of Birds. Insects Barts. Flying-fishes; Aerostatics and Aerokinetics. Flying-fishes; Aerostatics and Aerokinetics. Streamline Bodies, Aerofolis: Meteorology: Wenther, Clouds. Forz. Storms. Winds. Cyclones, Rain, Snow, Hall, Dust, Rainbows, Sunsest, Halos. Auroras, Lightning, Pressure, Temmerature, Humidity, Instruments, Climatolosy. Astronomy. Geography. Company of the Company of th

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# AVIATORS INSTITUTE HOME STUDY COURSE

THE course of the Aviators Preparatory Institute, Inc., has been prepared by aviators of long experience, and with the assistance of the foremost aeronautic authorities in the country, under the direction of Walter Hinton, pilot of the NC-4 on the first transatlantic flight. It covers sixteen allied aviation subjects with two hundred sixteen line drawings and sketches, including: nomenclature, airplane construction, airplane rigging, aircraft instruments, aircraft engines, ignition, carburetion, aerostatics, theory of flight, aerology, air navigation, and practical flying instructions,

Students completing this course are ready for actual flight training and may be taught to fly alone in from five to ten hours. The time saved through this advanced training is of great assistance to the young man who wishes to enter military, naval or commercial service

The Aviators Preparatory Institute, Inc., takes the student through every necessary step in his preparation to the point where he is ready for the flight school. Upon completion of this very necessary ground school instruction, flight training will be arranged for him if desired, at a convenient and reliable flight school.

Without sacrificing time, he can study at 'ome and fit himself to enter the rapidly growing aeronautical industry, in which there are fifty different professions and trades represented in addition to those of pilot and mechanic

This course has been assisted in its preparation by the National Advisory Committee of Aeronautics, Aeronautical Chamber of Commerce of America, Curtiss Aeroplane & Motor Company, Inc., Wright Aeronautical Corporation, the U. S. Naval Institute and a number of other foremost organizations.

# MAIL CONTRACTS ON POUND RATE

L EGISLATION amending Section 4 of the Act of February 2, 1925, was approved on June 3, thereby permitting the Post Office Department to contract for carrying mail by air on a weight instead of a count basis. The amendment to Section 4 follows:

"That the Postmaster General is authorized to contract with any individual, firm, or corporation for the transportation of air mail by aircraft between such points as he may designate . . . at fixed rates per pound, including equipment, under such rates, rules and regulations as he may prescribe, not exceeding \$3 per pound for air mail for the first one thousand miles and not to exceed 30 cents per pound additional for each additional one hundred miles or fractional part thereof for routes in excess of one thousand miles in length, . . .

Both the Department and the contractor are expected to benefit by the arrangement. the former saving money by eliminating a tedious count and much clerical work and the latter by being relieved of delay involved in making the count.

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# BYRD WELCOMED HOME

A S we are going to press, New York City is roaring a welcome to Lieut. Commander Richard E. Byrd, the first to fly over the North Pole, to his pilot, Floyd O. Bennett, to Lieut. G. O. Noville, the flight engineer, and to every member of the victorious expedition.

Thousands of persons joined in the demunstration which rivalled the home-coming welcome of our victorious troops from the

After a formal reception at City Hall and a luncheon at the Advertisers Club, Commander Byrd left for Washington to receive from the President of the United States the Hubbard Gold Medal of the National Geographical Society, a trophy presented to only six other men. Pilot Bennett accompanied him and was also awarded a medal by the Society.

At the presentation ceremonies, Dr. Gilbert Grosvenor, the president of the National Geographical Society said: "... that the records of his flight, at his request, have been examined by a committee of the National Geographical Society and found to have been carefully and accurately kept,

"These records, in the opinion of the committee, substantiate in every particular the claims of our member that he attained the north apex of the globe by airplane on May 9, 1926, the first to reach the North Pole by aerial navigation."

# GOLDSTROM GIVES UP GLOBE CIRCLING RACE

JOHN GOLDSTROM, who left New York on the "Mauretania" on May 19th in an attempt to lower the existing record for girdling the globe, was forced by illness to give up after arriving in Japan.

# TRANSPORT AVIATION

By Archibald Black

THIS is the first of a series of books on flying written by a man who has been an aeronautic engineer since the days when commercial aviation was but a dream of the future. Mr. Black is well-known to the readers of Aero Digest through his many authoritative articles therein.

"Transport Aviation" covers the entire field of commercial aviation, clearly and concisely analyzes the achievements and possibilities of this newest and most rapid means of transportation, presenting a fascinating story that will appeal to all.

For the investor it gives complete and accurate figures on all costs and returns in air transportation. The engineer will find it invaluable for its detailed technical data on every phase of equipment and upkeep, as well as its valuable information on design, operation and maintenance. The layman will find it an absorbing story of progress and achievement.

## COL. AZCARATE HERE

J UAN F. AZCARATE, a Colonel in the Air Service of the Mexican Army, is spending a few weeks in the States, making a detailed survey of the aeronautical industry. The Colonel is making his headquarters at the offices of Aero Digest.

# FONCK PICKS SNODY

C APTAIN RENÉ FONCK, who will take off in July or August from New York on a non-stop flight to Paris in an effort to capture the \$25,000 prize offered by Raymond Orteig to the first man to make the trip, has selected Lieut. Allan P. Snody, aide to Rear Admiral Moffett, and commander of one of the Navy San Francisco-Honolulu planes, to accompany him on the trip. Lieut. Snody will be the navigator, if Secretary Wilbur grants him the leave for which he has applied. Captain Homer Berry, chosen by Captain Fonck as the third man, will complete the crew of the Sikorsky S-35, in which the flight will be made.

Lieut. Allan P. Snody is rated as an expert both in the science of air navigation and in aerial radio work.



NOTHER high-class, custombuilt, five-place airplane incorporating the usual Travel Air features. This is a dual-purpose plane and can be used for either mail or passengers. With 180 h.p. Hispano motor—has a

pay load of 700 pounds; maximum speed, 110 m. p. h.; landing speed, 40 m. p. h. With the Wright Whirlwind-pay load, 800 pounds; maximum speed, 120 m. p. h.; landing speed, 40 m. p. h.

Our Engineering Department is at your disposal with guaranteed designs and performance.

We solicit custom-made airplanes. Let us know your requirements.



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Contractors to U. S. Government

# DECATUR CO. HAS NEW HANGAR AND SHOPS

T HE photograph across the bottom of these pages shows the new hangar and shops which have recently been completed by the Decatur Aircraft Company.

The hangar itself is eighty by sixty feet and the shop, containing the office and stock room, eighty by twenty-five feet. This building is situated on a field containing seventy-seven acres, in the form of an L, and is two and one-half miles from the center of the city of Decatur, Illinois.

The field has a runway, north and south, of twenty-six hundred and forty feet and, east and west, of thirteen hundred and sixty feet—both runways being six hundred and fifty feet wide. It has been placed upon the government airways, and is listed in the Aeronautical Bulletin as a Class A commercial field.

The company has turned out twenty-seven ships since January 1, which gives the shop a production of about five ships a month. These ships have all been built to order.

Up to the present time practically all of the building has been of types which were brought out by the war, mainly Standards and the JN series (Canucks and Jennies); but the company will have in production, for 1927 delivery, a new all-metal fuselage, three-place, commercial ship which will be sold at a price that will favorably compare with the present new production commercial ships.

A new class of students has just started. The Decatur Company has been very successful in training students, and since 1919 have never had a serious crash or injury.

The company is now employing three pilots and nine other workers in the shop. An interesting feature is that all of the employees of the company are ex-U. S. Air Service men and the pilots were former instructors in the various army fields during the war.

The company carries a complete stock of parts for Standards, JN4D and JN4C ships together with any part for Curtiss OX5, OXX6, Hispano Suiza and Liberty motors

# FRENCH GOVERNMENT FOSTERS INT. CONTESTS

THROUGH the offer of prizes to manufacturers for world's records made with their products, the French Government is actively promoting international airplane contests. M. Laurent-Eynac, Under-Secretary of State for Aeronautics, has announced that prizes amounting to 665,000 francs will be given to French manufacturers as follows:

- (a) The Government will pay 140,000 francs to the constructor of a French airplane breaking the present speed record during the year, and 60,000 francs to the engine builder of that airplane.
- (b) The same prizes will be given for seanlanes.
- (c) A prize of 50,000 francs to the airplane builder for the international airplane distance record without refueling, and a further prize of 50,000 francs for endurance without refueling, should it be broken at the same time. The French engine builder is to receive 50,000 francs which will be in-



The new hangar, training ships and group of officials and pilots of the Decatur Aircraft Company, Decatur, Ill.

# LEARN TO FLY

No bond required and no charge for breakage

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Room and board near field at \$10 per week

INCLUDING SOLO

# Eight Years Without An Accident

We guarantee to solo our students regardless of the number of flying hours required. We also furnish planes at very reasonable rates for those who wish to qualify for the F. A. I. pilot's certificate and we maintain an employment agency for our graduate pilots.

The flying school of the Robertson Aircraft Corporation is one of the oldest and best known in the United States. Our instructors are ex-army aviators and mail pilots with wide experience. Our equipment is the best obtainable. In over eight years of operation

Write for Booklet

#### 76 Students Graduated in 1925

our students have never damaged a ship in their solo flights. The flying field is approximately six miles from St. Louis and is easily accessible hy railroad, street car and hard-surfaced roads. It is the largest and best privately owned field in the country. The International Races of 1923 were held there. Mail planes arrive and leave daily.

Our course requires about two weeks, depending on the individual, and after its completion the refinements of the art can be gained only from experience. Commercial aviation is rapidly growing.

Don't Delay! Enroll Now

It is not necessary to purchase an airplane in order to take this course

AIRPLANES FOR SALE. We have airplanes ready for immediate fly-away delivery at prices ranging from \$650 to \$1750.

# ROBERTSON AIRCRAFT CORPORATION

OPERATORS OF UNITED STATES AIR MAIL ST. LOUIS - CHICAGO

LAMBERT-ST. LOUIS FLYING FIELD, ANGLUM, MO.

creased in the first case by 20,000 francs if the endurance record is broken. All these prizes are to be paid even if the French Government furnishes the airplane and the engine and the State supplies the fuel.

(d) If the straightaway distance without stop or refueling is broken one or more times, that French manufacturer of planes holding the record at the end of the year is to receive 50,000 francs a prize of 20,000 francs going to the engine builder.

(e) For new altitude record, a prize of 25,000 francs.

# INDIANAPOLIS AIRPORT

I NDIANAPOLIS will dedicate its new airport at the famed Indianapolis Motor. Speedway on July 17. Under the leadership of the Chamber of Commerce and with the whole-hearted coöperation of the Indianapolis Motor Speedway Company and the Indiana National Guard, the field has just been established.

Use of the Speedway grounds was donated by James A. Allison, Carl G. Fisher and Arthur C. Newby, the owners, the only proviso being that on the day of the Speedway race each year-May 30-the airport not be used. Adjutant-General William H. Kershner of the Indiana National Guard has obtained permission for the removal of the 113th aero squadron, the air unit of the Indiana Guard, from Kokomo, Indiana to the new airport, and they will maintain the field. The unit's two steel hangars will soon be moved to the new field. The Indianapolis Airport Corporation, formed by the interested citizens for the operation of the field, has provided sufficient money for the removal and the erection of an additional hangar for commercial planes using the field.

A comprehensive program has been planned for the dedication. Airplane manufacturers and makers of airplane equipment will have displays on the field during the day. At night, a program in the air will be given with guest aviators from surrounding fields participating. All of the money received from the event will be used to equip the field.

It is expected that the air mail service, which the post office department has planned to be operated between Chicago and Atlanta within a short time, will use the field for the Indianapolis stop. The post office department also has projected an east-to-west air mail service with Indianapolis as a stopping point. Robert H. Bryson, postmaster of Indianapolis, is chairman of the airport committee of the Chamber of Commerce, and his committee was instrumental in forming the corporation, obtaining the use of the field and bringing about the order for removal of the 113th aero squadron.

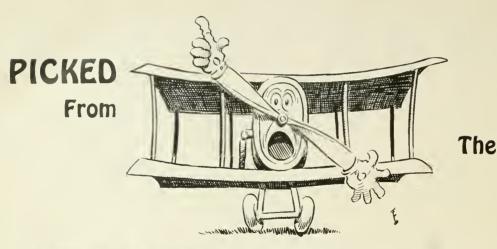
# NEW GLIDER RECORD

A MOTORLESS glider, piloted by Herr Otto Schulz, at Rositten, near Koenigsberg, E. Prussia, with a passenger on board, remained in the air nine hours and twentyone minutes. This nearly doubled the previous record of five hours and forty minutes made by the glider Goethen last year, piloted by Seiler-Chemnitz.

The flight also set up a new distance record for a glider with a crew of two.



Besides training students, the Decatur Company maintains a shop production of five ships per month.



AIR

AERO DIGEST will award a prize of \$5 each month for the best joke published. Only jokes pertaining to the aircraft field will be considered. Address the "Picked From The Air" Department, Aero Digest, 220 West 42nd Street, New York, N. Y.

Marie Snow, 111 Cedar Avenue, Tampa, Florida, won the prize for July with the following:

Flossie: How are you getting along with your flying lessons?

Tommy: Not very well. You see, I have lots of trouble with my banking.

Flossie: So have I. I always overdraw my account.

"If it storms this way for another hour," shouted the pilot of a Jenny in danger of being wrecked to his passenger who was a clergyman, "we shall both be in Heaven"!

"God forbid," was the prayerful answer of the divine.

A Scotch aviator, Jamie, had his friend Sandy up for a spin. They ran into a fog bank and were in great trepidation lest they should never get out of it.

At last Jamie said, "Sandy, I'm steering, and I think you'd better put up a bit of prayer."

"I don't know how," complained Sandy.

"If ye don't, I'll chuck ye overboard," said Jamie. Sandy began, "O Lord, I never asked anything of ye for fifteen year, and if ye'll only get us safe back I'll---"

"Whisht, Sandy," said Jamie, "the plane's clear of the fog; don't be beholden to anyone."

—George L. Becker.

Young Mother, proudly: "See! Baby is learning to walk!"

Friend: "Oh! Do you think it's really worth while to teach him? Practically nobody walks nowadays."

Pilot (to student): "Don't forget to set your altimeter."

Student: "What time shall I set it for, sir?"

--Paul T. Miller.

#### Safety First

He climbed from the cockpit, shivering with cold. "B'r," he chattered, I'm chilled to the bone."

"M'boy," said the instructor, "you should always wear a helmet."

Prospective customer to airplane salesman: "On what terms may I buy this plane?"

Salesman: "One-third down and the balance in twelve equal monthly payments."

Customer: "What would happen if the engine should stall at an altitude of only 500 feet?"

Salesman (still thinking in terms of finance): "In that case it's all down, no balance!"

—B. F. Capwell.

An aviator is an ambitious fellow, he starts on the ground and works his way up.

The young fellow who used to crash dances is now crashing planes.

The aviator's first attempt to steer the plane and hold a girl on his knees at the same time might be called a "Trial Balancer."

The best way to show a girl the ups and downs of life is to take her up in an airplane.

Never let a girl drive an airplane unless she can control herself.

A ride in an airplane is like listerine—it takes your breath away,

You don't need rope to loop-the-loop.

Never fall for an aviatrix unless you have a parachute,

Father: "But what does he do when he tires of a girl"?

Daughter: "Why he drops her, of course."

Father: "Then I'll not let you take any chances flying with him,"

"Who did the first 'falling leaf'?"

"I guess Eve must have done it in the Garden of Eden."

-New York University Medley.

"To-day the Napier aero engine is the best and the leading aviation motor in the World."

Sketch 3rd Feb., 1926

# Further Proof

The following is an extract from 'The Times' of 4th June, 1926:—

# Cairo - Cape - Cairo Flight

Sir S. Hoare, Secretary of State for Air, said:—
The flight from Cairo to the Cape and back by the Royal Air Force was completed on May 27th, when the four aircraft returned to Heliopolis one day in advance of the programme. A full report has, of course, not yet been received, but I am able to say that the flight was a complete success and that the four aircraft accomplished the journey of approximately 10,500 miles without any change of engines.

For this flight from Cairo to Cape Town and back by four aeroplanes, the British Air Ministry selected Fairey machines fitted with the famous—

# NAPIER

Lion

The Finest Aero Engine in the World

D. NAPIER & SON LTD. ACTON, LONDON, W.3.

Major Franco flew from Spain to the Argentine—6259 miles—in 59½ flying hours on Napier Lion engines.

The state of the s

# GUGGENHEIM FUND TO PROMOTE SAFETY

\$200,000 Aircraft Competition

THE Board of Trustees of the Daniel Guggenheim Fund for the Promotion of Aeronautics has come to the conclusion that the Fund should direct its primary energies to the promotion of ways and means to secure safety in flying.

Since Mr. Daniel Guggenheim placed at the disposal of the Board of Trustees the sum of \$2,500,000, the Board has been studying the directions in which its resources could best be used for fundamental advancement of the art and science of aviation. It was realized that unless some well-defined policy was established, the money at the disposal of the Fund could easily be dissipated without fundamental results.

From fundamental research work now in progress and from the construction of some new types of airplanes involving a number of radical aerodynamic departures from the conventional airplane, sufficient progress has already been made in the direction of safety to justify faith that a complete solution of this problem is possible and that it may even be very near at hand. Indeed today flying is actually much safer than it is generally assumed to be.

Due to the weak financial status of the infant airplane industry in all parts of the world, manufacturers are financially unable to develop on their own initiative, types that have not a definite commercial value. This restricts development for the most part to

war types. Governments at the present day are almost the sole buyers of airplanes in quantity.

Such commercial planes as are made are naturally an adaptation by the manufacturers of military types to meet commercial needs. The aerial transport companies are unable to devote primary attention to designing commercial planes. Their present most urgent need is a plane with a high "pay load" economical of operation and construction.

The chief problem in promoting safety in flying may be thus stated:

Today, when the speed of the conventional airplane is reduced below its so called "stalling speed," it ceases to function like an airplane. If the airplane is flying at sufficient altitude and is aerodynamically well constructed, the pilot may recover from the "stall" and regain control. However, should the stall occur in leaving the ground, the cause of a great number of accidents, a crash is inevitable.

In a like manner in forced landings, crashes are commonly due to the speed necessary to avoid a stall in attempting to fly over some object adjacent to a closely confined place chosen for the landing or in landing in uneven or closely confined ground.

Major R. H. Mayo, Consulting Engineer and representative of the Fund in England, has summarized as follows the essential characteristics of the present day airplane which make the development of the safety factor necessary.

"(1) The landing speed is far too high,

and the length of run after landing is too great.

"(2) The gliding angle is too flat, making the approach to a given spot for landing too difficult.

"(3) The length of run required before taking off is too great.

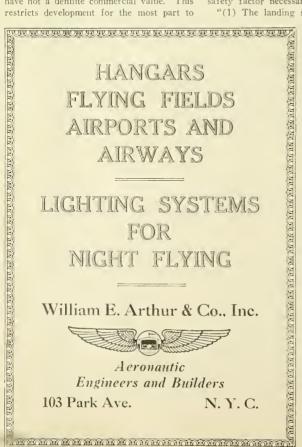
"(4) The angle of ascent after taking off is not great enough.

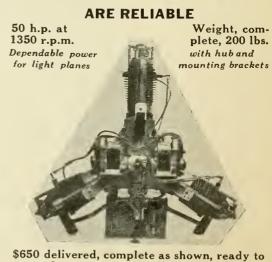
"(5) If the aeroplane is stalled, it becomes unstable and at the same time control is lost. . . ."

In spite of these difficulties, however, inquiry discloses the fact that great strides are being made in meeting them fundamentally.

To bring to a focus, and to give the greatest possible encouragement to every endeavor to make the airplane safe, the Board of Trustees of the Guggenheim Fund has determined to organize an "Open International Aircraft Competition." It shall probably appropriate \$150,000 to \$200,000 for this purpose so as to make the competition interesting and attractive to the best designers and manufacturers of aircraft throughout the world.

This competition will be held in this country. Experts from many countries will be consulted in the framing of rules and regulations to govern the contest, and it is believed that such interest can be aroused that this contest will not only become an actual inducement to rapid development of safety, but also serve as a demonstration of the marvelous progress which has been made in safe flying.





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#### AIR - HOT AND OTHERWISE

(Continued from page 8)

futile it usually has been to urge thought on the more or less great minds of the Senate, if one did not remember that certain statesmen once didn't think the people cared what might be done in Washington with the World Court and the Volstead Act and were much surprised when they were mopped up and wrung and thrown into the ash-can in the recent state primaries, one would be inclined to the belief that the Senate might expect a loud roar from vox populi concerning this procedure. But the Senate never does expect a storm until the barometer blows its bottom out and the Washington Monument sways dizzily as in a great wind; it never seems to realize that Uncle Sam, with a large magnifying glass, continually observes the individual members of the Senate as some great entomologist might study other insects with the thought of cutting bad bugs from the swarms. The fact is that just as certain men have gone out of the pleasant purlieus of our Capital because of what they did with regard to the World Court and Volsteadism, certain others now are sure to go because of that which they have done with regard to our air effort. They will vanish by the air route, and air travel is so fast! They don't realize how fast it is.

There is every indication that the General Staff for some time has done the thinking for the Senate Military Committee. This, the people of the nation are likely to declare, is not according to the unofficial rules and regulations laid down for Senators to follow.

Senator Bingham, who was the high priest of the President's Aircraft Board, or at least was its chief source of aeronautical knowledge, was also the bright particular champion of the provision of the Bill which favored the abandonment of lighter-than-air craft by the Army Air

In this, fortunately, the Senate did not see eye to eye with him. Instead it provided for the Army such a number of "airships, free and captive balloons," as the Secretary of War might "determine to be necessary for training purposes." So the astonishing determination of Senator Bingham to eliminate participation by his own arm of the service in one of the most vital details of our national defense took him only into a crash.

The Bingham argument was interesting. Let us quote his own elegent, expressive senatorial language, as officially recorded: "An airplane," he declared, "could put it all over an airship on land."

This is the sort of argument, the sort of support for American air development, which if followed by the nation would take out of the air what little we now have in it and keep us from getting any substitute therefor. This kind of argument used years ago in connection with the mail would have left our postal service to the present day on horseback.

Another little detail of the Washington procedure with regard to this important piece of legislation is of a nature calculated to turn thought back to one of the brief statements made earlier in this article.

Our esteemed, wise and very popular friend, Senator Wadsworth, Chairman of the Senate Military Committee, of the legislative body which he graces with his membership, opposed the general idea that the man selected as Chief of the Army Air Service must in fact be a flyer.

Wadsworth admitted that a flying officer should have the post and declared that to it a flying officer probably would be appointed by the President. But he felt that in

(Continued on next page)

# **AVIATORS** PREPARATORY INSTITUTE

Aviators Preparatory Institute offers at low cost to those interested in the operation of aircraft, a complete and thorough course of instruction in

all subjects of practical aeronautics such as is required by the Army, Navy and Marine Corps before actual flight instruction.

A thorough knowledge of the principles of flight, aircraft construction and the ef-fects of atmospheric conditions on flight is a vitally important part of every pilot's training.

Aviators Preparatory Institute thoroughly prepares you to take flight training.

Aviators Preparatory Institute is conducted by aviators of long experience under the direction of Lieut. Walter Hinton, noted transatlantic pilot and aerial explorer.



Walter Hinton, formerly U. S. Naval Aviator, pilot of NC4, first flying machine to cross the Alfantic, 1917-18, instructor in the operation of large attributes, Naval Flying Base, Pensacola, Fla. August, 1918, senior seaplane pilot in charge flight operations, U. S. Naval Alar Station, Halifax, N. S. May, 1918, a pilot of NC4 in transatlantic flight followed by 10,000 mile demonstration tour in the waterways of the United States, 1922-23, flight New York to Rio Janeiro, 1924, aerial exploration and mapping of South American jungles with Hamilton Rice Expedition.

# Outline of Study

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1. Aviation History 2. Aviation Nomencla-

Construc-

- ture 3. Airplane
- tion 4. Airplane Rigging
- 5. Aircraft Instruments 6. Aircraft Engines
- The Liberty Engine
- The Hispano-Suiza Engine
- 9. Ignition 10. Carburetion
- 11. Aerostatics12. Theory of Flight
- 13. Aerology
- 14. Air Navigation 15. Modern American Aircraft Engine Development
- 16. Practical Flying Instructions

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(Continued from preceding page)

event of war the hands of the Commander in Chief should not be tied. Obviously he thought they should be free. as official hands habitually have been in this country, to make such mistakes as may happen to be easy. He worships historical precedent, does this New York Senator.

To us, far from the madding whirl of dizzy Pennsylvania Avenue, Washington, sitting instead in the calm and quiet of Times Square, New York, where all is safe and sane and the surrounding city is infested merely by bootleggers and gunmen, being virtually devoid of Senators except when out to be reelected. Senator Wadsworth's assumption must have been that in the Army Air Service may exist no man of skill and judgment great enough to be its Chief. He should have asked some n. c. o. to inform him on the subject. Then he would have learned that in that service twenty available officers have had twentytwo years service each and forty-three have behind them fifteen years of training for jobs requiring just such expert knowledge.

Does it not occur to Senator Wadsworth, upon calm reflection, that among those sixty-three there surely must be one capable of assuming foremanship above his fellows? Is the good Senator perchance convinced that all of them are duds (and dubs) and that it may be necessary to reach out into the unknown (say into the serried ranks of the political armies of his great home state) in order to discover expert skill capable of directing our air effort? Can it be true that he is right and that it will be better if we turn our vitally important air service over for direction to some individual whose feet have never left the ground of politics—even when by brisk campaigns it has been stirred into inglorious mud?

The celebrated Senator from New York state endeavored to emphasize his point by showing that General Geothals (the magnificent and able) never had had any experience when he was made Quartermaster General. He did not go into details as to the various other gentlemen who from time to time have tried that same big job in similar circumstances and made a dismal failure of it for themselves and a tragic, costly failure of it for the Army

and the nation.

And yet the Wadsworth family has produced its patriots. The gallant Craig of that old line was one of Roosevelt's band in Cuba. How time flies! And how great is its effect, anon, on family psychologies.

THE ships which carry our air mail never set forth from any point with a full paid load. Unless the conditions which exist are changed they never can. The high air mail rates make that impossible. If the laws were changed so as to give air mail carriers the same price per ounce that railway carriers are now given, the ships would fly each trip with full cargoes and at the lower rates make far larger aggregate income than they do now, with no additional expense. This would mean satisfactory profit. The air mail automatically thus would become successful as a business enterprise, and the air would buzz with many planes.

The benefit this would confer upon the public would be literally incalculable. Two cents an ounce, New York to Chicago, an overnight trip for a letter! What would

it mean for business?

The fine profit earned by full ships in air mail service, at regular mail rates, would mean money on the right side of the ledger for the development of that service. That would mean better planes, indeed, the best planes in the world, for when Americans with available money start out to smash precedent and improve service in whatever line they always do the trick.

Such procedure would be simple, obvious, yet there are no signs that it is contemplated.

Whose fault is this? Whose pull is it? Can it be that of the railways?

If so no great amount of blame attaches to them. They are merely nonprogressive; they do not see the plain handwriting on the wall; they fight progress instead of adjusting themselves to it. That is a human failing which has been as frequent in the history of other interests as in theirs. They doubtless think they are fighting for their own. Some of them are still opposing motor-truck transport, although the more progressive lines are using it and partially controlling it in their own areas.

The blame really attaches to the Congress and the various Departments interested which allow the situation to continue in contravention of the best interests of the whole people—the businessmen and private citizens who so importantly depend upon the mail service.

To oppose development of air transport of mail is a short-sighted policy upon the part of anyone. In the United States there is work enough for every form of transport. For straight pull of weight the locomotive beats the airplane, naturally, but the airplane beats the railway for straight speed.

The loss of the 800 to 1000 pounds of mail each of our mail airplanes should carry upon every trip would not seriously affect the railways, while the profit from the carriage of that mail is essential to our air development, even as its high speed carriage in the air is essential to the right progression of our commercial, social and industrial life.

Another Congress convenes next December and when it comes it will not be a difficult matter for right-thinking people to draft and put through such legislation as may be required to straighten out this matter. Wherever in America an air mail route exists it should carry letters and all other first-class mail at the same rates for which such material is handled by any other agency of postal transport. After this has been arranged our air mail service will grow steadily, its losses will entirely disappear, its profits will pile up and the nation really will reap the benefit of the great invention sprung out of its wonder-working children's brains.

## AWAKE, AMERICA! (Concluded from page 7)

and Navy, who have established and maintain an interlocking directory to suppress all modern means of defense. They maintain lobbies in Washington to influence the President and Congress. They have propaganda agencies which carry on a campaign of misrepresentation as to modern defense conditions all over the country. They call on industries that sell them equipment to assist them politically and obtain political support from the communities in which their organizations, posts and stations are maintained.

This system must be changed, it has become a national

We must have a single department of National Defense with sub-heads for the Air, Land, Water and Munitions. We must have a single directing head and a single staff to handle all major defense questions.

Until this is done we shall continue to lean on a broken reed and should the call come to defend this great country we shall find ourselves even more defenseless than we were at the beginning of the Civil War or the World War.

Intelligent public opinion reflected in laws enacted by Congress is the only remedy.



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opens up a world of opportunities for young men. The Sweeney System has no planes to sell, and sticks strictly to teaching both ground sorks and pilotace Sweeney Airrord is one of the best and safest fields in the U.S. Sweeney Strong to the William Oldar School Insure you the best, most practical instruction. Mechanics earn \$50 to \$150 a week. Piers, up to \$500.

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# WICKWIRE SPENCER PRODUCTS

# A NOD AND A WINK

(Continued from page 20)

strategists and constructors will be realized-a Navy that can't be sunk."

When I asked Major General Towzer of the Infantry the same question, he replied:

"As usual the infantry will fight the war. The Navy will get all the supplies and the Army will have all the casualties, same as in the last war. War in the air? It may start there, or on the sea. But it will finish in the mud. And the Poor Bloody Infantry, as usual, will be there at the finish. Moral? Join the Navy and see the world."

This seemed pretty conclusive to me until I met Commander Diver of the Submarine Corps.

"War in the Air?" he laughed. "Don't be a Congressman! In the next war the submarine will be the deciding factor. My latest command can dive deeper, stay down longer, and come up dryer than anything yet designed. The next war will be fought among the flounders. If we use planes at all, it will only be to tow a clothesline to dry our laundry on."

But Colonel Charger of the Cavalry disagreed with this. "The horse," he said, thoughtfully chewing a straw, "will come into his own in the next war, which will not be fought solely in trenches. In a break-through, where is the infantry? Snowed under. Then the cavalry will function. As we believe in progress, we may use airplanes to discover better pastures for our horses, or even to carry oats for them.'

"The deciding factor," said General Dudd of the Antiaircraft Corps, "naturally will be the anti-aircraft batteries, The war will start in the air and we shall stop it immediately. The moment an invader appears we shall pot him. On their flight over here, enemy planes will probably sink our Navy. That will be regrettable, but relatively unimportant. It's getting rusty, anyhow. No plane shall pass the coast, however. And if they do, they can't land. It's against the Immigration Laws."

I left him shooting at a small rubber balloon with a bow and arrow, and went over to Anacostia, where the Army and the Navy have put their airplanes on the same field so they can watch each other and thus guard against either making any advance in aeronautics. This is the first case on record where the Army and Navy have agreed on anything

The standard plane of the Army is a D.H., designed by an Englishman, and of the Navy an H-16, designed by another Englishman. Both of these planes are a slight advance in design over the Wright Brothers' original Kitty Hawk airplane. I believe they came out the following year. They are used only for Department officers to get in their pay-hops. The cockpits are lined with tin so the pay-hop pilots won't get their spurs caught between the floor and the rudder bar.

At Bolling Field, the Army side of Anacostia, they used to have some PW8's, which were just a trifle fast for the Department aviators. They preferred the old D.H. One night the hangar burned down with all the PW's inside. And everybody wondered how the fire started.

Well, I looked over the outfit, but it would take a better imagination than mine to think the country could be defended from the air with any plane I saw in Whitewashington. You can't fight much of a war in D.H.'s. I hear they do have some newer planes somewhere. Or did have. They may have used all the new ones in those crash-tests at McCook Field. Or the Navy may have used them for training planes. That would account for quite a few write-offs, unless the Navy has changed its policy of training officers to fly when they're too old to

At my hotel I found I found awaiting me a telegram from the Editor.

"Return at once. Airplane observed over New York. May be our Air Service."

Lady, that's just your optimism. It was probably Casey

Earle Ovington Consulting Engineer Santa Barbara, California Frank A. Tichenor Aero Digest, New York

June 7, 1926.

Just perused Cy's "Uplifting Kansas." Laughed so hard the tears prevented me from finishing your periodical. Please rebate for the amount I missed. Earle Ovinaton.

Dear Earle: When you read "On de Fence" we'll owe you two rebates.

#### PREPAREDNESS

(Concluded from page 17)

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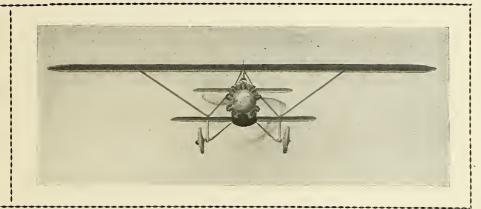
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casing, \$10; newly made tube, \$3; war surplus tube, \$1.75; DH wheel, \$8.50; OH casing, \$10; DH war surplus tube, \$2 or newly manufactured tube, \$4; adapters for attaching DH wheels to IN4O or Standard, \$7.50.

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#### WEATHER AND NATIONAL DEFENSE

(Concluded from page 9)

fogs off the California coast add difficulties to west-coast defense. Enemy aircraft can approach unseen by surface craft or the land defenses, and by utilizing prominent mountain peaks can accurately fix their position for bombing. Fog prevents the use of searchlights at night and the control of anti-aircraft gun fire by electrical sound detectors has not approached a stage of accuracy that allows dependence upon it. Until local control of clouds and fog is realized, other aircraft present the only practicable defense under such conditions.

The Navy is not content, however, with this solution of the problem. We believe that local fog and clouds can be dispersed by precipitation and our experiments give promise of success. With a means of artificial control, the clouds or fog over or near a land objective would be dissipated so the attacking aircraft could be brought under anti-aircraft fire before they gained a bombing position.

The possibilities of weather control in local defense are limitless. The commercial possibilities are so apparent and far-reaching that it is unnecessary to give space to them.

It is hoped that a study of the upper air will disclose steady trade winds of high velocity that may be utilized as main travel lanes in the future in the movements of large units of our air forces from air bases to the theatre of war. Many meteorologists contend that such major air currents exist with velocities approaching two hundred miles an hour.

The use of certain types of clouds to cover aircraft attacks is as old as the employment of planes in war. Low clouds and fog interfere with aerial reconnaissance, scouting, bombing, and photography and advantage may be taken of such conditions by a naval commander lacking aerial superiority. The strategy and tactics of weather in war are practically untapped subjects. Time alone, with an attendant increase of meteorological knowledge, will impress upon us the material aid that weather can render in the defense of the country.

Man's determination to master the science of aerography is but another of his efforts to rise superior to his environment. If the Navy can further this advance in knowledge by reason of the applicability to National Defense, it will have substantially justified its existence in time of peace.

#### "HELL'S BELLS" O'NEIL

(Continued on page 22)

round up my covey of Don Juans for a little sky-flying over to the Cambrai picnic grounds. I get back at dusk and beat it down to the Major's shack to hear the story. He's standing before a shaving mirror with a pair of white cord britches on and a clean shirt and he's sort of polishing off his hair with a couple of combs and a bottle of French grease.

"'Is she gone!' I asks politely.

"'Well, unimmm,' he says, 'er, to be quite frank, no.' Then he sort of wiggles a bit. 'You see, she seems to be quite a capable young woman, and besides I couldn't very well send her away to-night, could I? Rather awkward.'

"I smiles at him, sort of coy. He wiggles some more. 'All right,' I says. "Button up your coat, Padre, and come on over to the Mess. Me and Mac Pherson is having a farewell dinner. We just heard they're a couple of squadrons with hair on their chests down in the Vosges. We got our pride, we have.'

"'Yeh?' he says. 'Well, let me tell you, O'Neil, I'm major here and when I say she's a damn fine woman,

I mean it!'

"'Yeh?' I says, 'and him a married man, too. You'll find the perfume in the lower drawer, Bertrand. The boys all use lilac

"Well," says "Hell's Bells." "I still carry the mark where his bootjack socked me, but I done my duty. Speaking of bootjacks, reminds me of how Tubby Slocum busted his -" (In August.)

#### AIR BOMBING

(Concluded from page 57)

those altitudes handicapped in the danger zone of anti-aircraft. This improvement alone is perhaps the chief reason why bombing cannot be stopped by anti-aircraft. In fact it may be again conducted in daytime where most bombing turned to the night for its protection when it was not able to get effective results at such altitudes.

Ingenious sound detection has been developed for antiaircraft with good results, but this is inherently limited to favorable conditions, and can only average great inaccuracies at such distance against airplanes traveling 150 feet per second. Again, the newer bomb sights require much less time of straight flying during the approach, so that both sound detection and visible sighting of the airplane are greatly handicapped. The problem for anti-aircraft is somewhat more difficult than for the bomber. The latter can have a considerable error in his altimeter with small effect upon his accuracy, whereas anti-aircraft fire is doubly dependent upon very close determination of the airplane's distance, as this effects both his aim and the setting of the time of burst. At the speed the shell is traveling, only a fraction of a second variation means that many shots which might be dangerously close, go off far above or below the airplane. The fact remains that Ord-nance Department analysis of many tests, shows that the errors of anti-aircraft fire increase nearly as the square of the height, which is to say, that an average error of 60 feet, at 6,000 feet altitude, enlarges to about 240 feet at 12,000 feet altitude, and the burst must be within 40 yards of an airplane or less to do any damage. It appears, for this reason, that while the improvements in anti-aircraft accuracy will make it deadly within the zone where it was always dangerous, between 2,000 or 3,000 feet and 8,000 or 9,000 feet, the dispersion increases so rapidly with height, that the maximum cannot be very materially raised, beyond which the airplane is comparatively safe.

How about moving targets? This question has revolved around the battleship with more controversy than its importance perhaps warrants, in view that the last war was conducted largely on land. Actually, however, the problem is surprisingly simple with modern instruments, though very difficult with wartime sights. The latter may be compared to shooting birds in flight with a rifle sight. The rifle sight may be very accurate for stationary objects, correcting for the bullet's drop and for wind deflation and range, but leaving the gunner to guess where to aim ahead of the moving bird, that is, the "lead." Wartime instruments leave to the bomber's imagination how far the moving target will travel while the bomb is falling, and the guidance of the pilot to an invisible spot ahead of his target. This, involving the estimation of the target's speed, is a very difficult matter, and we would not expect three hits out of 100 from 10,000 feet. The modern sight, however, automatically guides the pilot for the correct point even though the bomber does not know or even estimate the target's speed. It also corrects the range, however this may change, due to the ship's relation to the bomber. The probability is now 59 hits out of 100, instead of a

doubtful 3.

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# THE AERO FIELD

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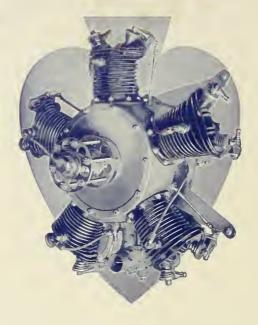
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AIR MAIL and COMMERCIAL AVIATION Number

C. K. CARPENTER

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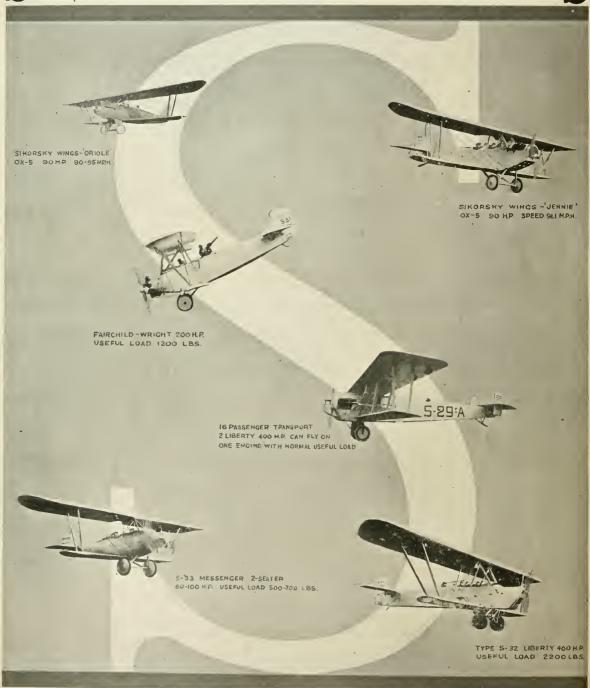
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THE Curtiss "Hawk" pursuit aeroplane is now available to the Army Air Service as an advanced training machine, with the 180 h.p. Wright E-2 motor substituted for the regular 440 h.p. Curtiss D-12 motor. Except for this power plant change, the entire ship is identical with the regular P-1 "Hawk."

This new combination, which is known as the AT-4, has resulted in a machine that is peculiarly well-fitted for advanced training purposes.

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The installation of a 180 h.p. motor, quantities of which are in stock, make possible substantial reductions in initial and operating costs.

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Several years of service development on the "Hawk" series by the Service Personnel and Curtiss Engineers have resulted in a machine that approaches perfection in its care and maintenance. The AT-4 incorporates all of these improvements and is a type already familiar to the Service.

#### PERFORMANCE:

The AT-4 has a high speed in excess of 130 m. p. h., a ceiling of over 15,000 feet with maneuverability similar to the P-1, acknowledged the most maneuverable ship in the world.

But the AT-4 is more than a training plane. The entire power-plant can be detached by the removal of four taper pins, and a regular D-12 power plant substituted. Thus, in time of emergency, the AT-4 can be instantly converted into a standard P-1 "Hawk" ready to take its place in our first line of national defense.

The Navy advanced training problem can be similarly solved by the use of the 200 h.p. Wright J-5 motor in the Navy type of the "Hawk" seaplane.

THE CURTISS AEROPLANE CLINTON AVENUE



AND MOTOR CO., INC.



# AIERO DIGEST

Vol. 9 No. 2

AUGUST, 1926

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"The Air Mail Service has Blazed the Air Transport Trails Across the Country in True Pioneer Fashion"

# TRANSPORT TRAILS BLAZED BY THE AIR MAIL LINES

HE story of the past and the condition of the present so far as the Air Mail Service is concerned is very aptly stated in the following paragraph taken from the circular of Chairman O'Leary of the Chamber of Commerce of the United States:

"The Air Mail Service has blazed the air transport trails across the country in true pioneer fashion. It now devolves upon private industry... to continue a sound development of this new form of transport and encourage its use in the carrying of goods and passengers."

The purpose of the Post Office Department in carrying the air mail has been something more than to provide a service—it has been to pioneer in a field of transportation which in the very nature of things could not have been successfully undertaken by any other agency than the National Government. It has demonstrated to the American public that service between far distant points can be supplied by airplane with regularity, speed and accuracy.

Of course we have had failures and accidents. Most of the accidents have carried their lessons and unhappy as they were they have been productive of knowledge that serves to prevent their recurrence through elimination of

Most of the delays have been caused by weather conditions—chiefly fog and poor visibility, and a majority of the accidents to under-developed machines. There has been immense advance in the character of machines since the air mail service was undertaken, all made possible through the lessons taught by experience.

I have been so often misunderstood that I almost hesitate to give any expression of my belief as to the future of the air mail. Transportation by air is very expensive. It will probably never be reduced in cost to a point which will make it dangerous competition to steam or gasoline surface services. I doubt if the Government can undertake to permanently maintain air lines for the sole purpose of transporting the quantity of mail that can reasonably be expected for them.

There has been a tremendous demand from all over the country for the establishment of air mail service and it is difficult to make the public understand the impossibility of complying with all these numerous requests. This would not be possible even to the great financial resources of the Government because of the expense involved.

The Government of the United States can carry nothing it the mail and receipts from this source will not provide

By Postmaster General Harry S. New



adequate revenue in many cases. The overnight service between New York and Chicago does not pay operating expenses; it is growing, but nowhere else can we look for the volume of business that is furnished between those cities.

It is up to private capital to establish and maintain air services. Receipts from the mail will serve as a substantial backlog but to be commercially successful, revenues must be obtained from other sources also just as they are required by railroads, steamships, bus lines and every other established means of transportation.

Within the last year the Post Office Department has accepted bids for the establishment of 13 lines, some of which may be doomed to commercial failure, but neither the public nor the contractors would have ever been satisfied without a demonstration. There will be other experiments and other failures hereafter but there are many lines that can and will be successfully maintained and in my own mind I am satisfied that the services will grow and mul-

tiply rapidly, providing a vital need throughout the country.

At a dinner given by an aeronautical association here in Washington several months ago I stated that the Post Office Department's chief trouble was not that we were not going rapidly enough but that we were going too rapidly. What I had in mind was that we felt ourselves forced to yield to popular demand for services that could hardly be expected to succeed financially and that every failure would prove an impediment to future development.

In my opinion air lines in the United States will only be permanently maintained as they are made commercially successful, and to be made so they must not be dependent wholly upon receipts from mail—they must carry passengers and packages. Where such a line is in existence the fact of its operation will compel the Government to use it for the transportation of its mails in all cases where the savings of time made possible will command for it a rate of postage that will let the Government out.

It is the purpose of the Department to maintain the services that are now provided by the Government, namely, the Transcontinental, and the New York-Chicago night service, until such time as they can be turned over to private companies with a guarantee that they will be maintained.

The Transcontinental is the backbone of the system. Changes in it may be found necessary by experience, but the transportation of mail across the continent by air must be continued in spite of all obstacles.

# OTHERWISE AIR—HOT AND

The Sad Spirit of 1926

By Frank A. Tichenor

HERE was the Spirit of 1776 and there is the Spirit of 1926. The Sesquicentennial at Philadelphia tried to prove them similar. The department heads of the United States Army

and Navy succeed in proving them to be quite different. Washington has as much trouble as a little girl at boarding school in keeping its bureau straight—especially the Navy's Bureau of Navigation.

Wait. One must not be too hard on little girls at boarding school. None such ever got her small affairs of undies, text books and notes from little boys into such confusion as that which at the present moment characterizes, for example, the Bureau of Navigation. The General Staff is in a state almost as pathetic, but we'll let that pass for this

Messy is the only word for the Navy Navigation Bu-

Cluttered up, it is, with some truly awful rubbish in the shape of minds that started out all right but have been moth-eaten. Political moths, social moths and a whole lot of like destructive insects habitually seem to enter and feed upon the brain-pot contents of the handsomely uniformed members of this bureau.

Never in the history of our armed forces has there been such a oneness of strategy against any foe as these two commanding bodies show in their hostility to air development. The Bureau of Navigation has a skill at this which is uncanny. The latest honest patriotic skull to have been battered into soreness down at Washington is that of Naval Reserve Aviation. Just at present the United States Navy has little use for reserve aviation. It will be mighty glad to get it if the bombs begin to fly. But naval spy-glasses cannot look into the future. Mere sugestion of foresight cracks their lenses.

Let's take a glance back at the glorious part the Navy actually played in the creation of this aviation reserve, which very likely (if it isn't murdered utterly) will be some day the very most important reserve possessed by the United States, for it will be the citizen soldiery (not necessarily marine, even though it be called "Naval" reserve) trained to operate above the sea in a war which surely will begin there, will come on us at the rate upwards of a mile a minute and will hit us at the rate of a billion tons of bricks or harder. Aviation isn't taught in fifteen minutes by a hayfoot, strawfoot drill sergeant, and nobody will be keeping the enemy engaged while we shift about and wabble as the Allies kept them in 1914-16.

And what have we really got? The first Naval Reserve Aviation unit was sponsored but not wholly paid for by the First Battalion of Naval Militia, starting Jan. 17, 1916. The Curtiss Company gave one plane to be used in training and when the second unit was organized, March 9, 1916, equipment again was supplied by patriotic private individuals, among them being Vincent Astor. The Government, including the Navy Department, even failed to furnish a site for training, and both units were invited by Charles Lawrance to use his private property at Bayshore, L. I., for the purpose.

In 1919 the men were released from active service and slipped into the reserves again, automatically. We now have three other units located at Boston, Sand Point and on the Great Lakes respectively. A reservist of Class 5 according to Regulations must do 36 drills a year, with 15 days active duty and at least 15 hours in the air each year.

Fat chance. After the organization of the Rockaway unit in 1919. 1920 and in 1921 and 1922 no facilities were provided for drills, but

training duty was graciously permitted (without funds) in

Obviously the gold lace and brass buttons of Washington had their thumbs turned down for the whole idea. Those who anxiously made inquiries at the Department were discouraged and told that within a few years there would be no Naval Reserve Aviation. A good guess. The man said of his mother-in-law just before he fed her pounded glass, "In a short time I shan't have a mother-in-law." Wonderful ground-glass feeders are the members of the Bureau of Navigation after they have decided that anything is under way which might make their own jobs less of a mystery to the taxpayer. "In flim-flam there is strength," the good old Navy motto, never is forgotten for a moment by this smoothly—very smoothly—functioning

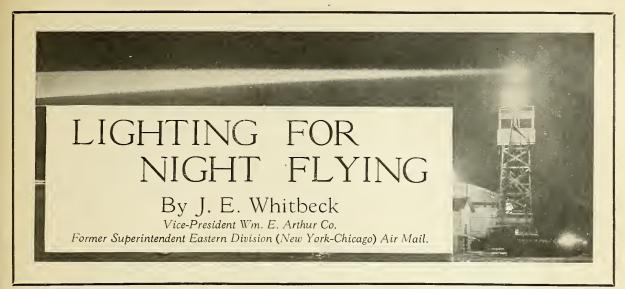
The Naval Aviation Reserve units were forbidden to enlist any new men and were given no material. Pay? The Prime Minister of France came over to America to find out how to refuse to pay the French debt to America. The first place he visited was the Bureau of Navigation. Its reputation is world-wide for tea-drinking, dancing, gossiping, wire-pulling, red-tape winding, gold-lace dignity-and disinclination to let anybody else get money out of Congress. He learned in a few minutes how Americans can be kept away from the safe, how best to repudiate in time of peace the men who were happy to be volunteers upon the job of national defense while the rapid-firers were in action, the submarines were sneaking under, and the German airmen were over the Allied capitals.

Today such Naval Reserve Aviation as we have exists in spite of the efforts of the Bureau of Navigation to wipe out this arm of the Navy.

Naval officers outside the Bureau of Navigation rarely have this blind spot in their eyes. Captain Timmons, Aide to the Commandant in the New York District, is free from it. He made many recommendations for a Naval Aviation Reserve Unit and then he was relieved! Captain Long was given the job and the unit was authorized. So Captain Long was given another berth (wanderers are these Navy chaps), and after him came Captain Hanrahan, a practical aviator and an enthusiast for the Reserve. He really got things moving-and he was sent elsewhere. Captain Kaiser, his successor, is not at all the sort of kaiser that we all swore we'd can, but he let the Reserve matter drift and therefore a breath of relief went up when Captain Enochs was appointed. It is contrary, you will note, to the policy of the Bureau of Navigation to let any man stay long in any job. Henry Ford once said that if he had manufactured motor cars by United States Navy methods he long since would have been given a life sentence in a debtors' prison. Say "Navy" to the wizard Edison, head of the Naval Consulting Board during the war, and he turns pale.

Captain Long, in the post now less than a quarter of a year is an enthusiast for the Naval Reserve but has his knife out for the aviation end of it. He don't believe so much in flying, anyway; he seems to think that military

(Continued on page 148)



HE most outstanding thing in aeronautics today is the creditable showing which has been made in night flying. Night flying on a regular schedule is about two years old and even though there are still many problems to be met to ensure safe and regular night operation of airplanes, the performance of the air mail has been better than was expected by even the most optimistic.

When the Air Mail Service started to light their airway in 1924, there was no precedent to be guided by in selecting beacons or locating them along the airway; in fact, at that time there were no beacons which were entirely suitable for this work, so the development had to start way back with the designers and engineers of the lighting companies and be rapidly developed so that it would be available for actual use within the few months which the service was allowed to light its airway.

Lighting equipment for the planes themselves was some-

what easier, as Lieutenant Brunner of the Army Air Service at McCook Field, Dayton, Ohio had been developing lighting equipment for planes for several years and his developments were adapted by the Air Mail Service practically without change.

Several methods of field lighting were tried, and for the terminal fields a standard has been developed which consists of the desired number of boundary lines, of 6.6 amperes on series circuit and placed about 200 feet apart around the boundary of the field. These lights are ordinarily white lights, however green lights are used to indicate the best approaches to the field and red lights are used to indicate an obstruction that may be adjacent. Wherever possible, the red light is placed on the obstruction itself.

A suitable flood light or flood lights are provided to light either the entire field, or especially prepared runways that may have been

constructed. For the largest fields an arc flood light of 500,-000,000 candle power, with 180° lens, is the most popular method of flood lighting, even though it is somewhat expensive. However, the additional attraction and publicity that one of these flood lights gives probably offsets a considerable portion of their cost. Another method of flood lighting is by the use of so-called "aviation field lights," which may be used to good advantage where it is only desired to light the runways, or where the field may be "L" shaped or "T" shaped and the cross dimension to be lighted is not more than 1,000 feet. These lights are usually placed about 400 feet apart in a row alongside, or along both sides, of the runway or field to be lighted. They use 1,000-watt incandescent lamps and are usually hooked up on series circuit, Parkway steel-taped cable is laid underground to furnish current for these lamps, as it is with the boundary lights.

A 24-inch revolving beacon is used at all fields. These

beacons use 1,000-watt lamps and revolve six times per minute, with the beam of light raised 1° or 1½° above the horizon and are used to guide the pilot to the field. On the average night the concentrated beam of these lights is visible about 15 miles. This same type of beacon is used at emergency fields mounted on 50-foot steel tower, and at the terminal fields is usually mounted atop the hangar.

An illuminated wind direction cone is provided at all terminal and emergency fields, illumination usually being by four 200-watt lamps mounted above the cone and using the ordinary reflectors.

At the terminal fields and at emergency fields, at about 100-mile intervals along the airway, ceiling lights are provided which project a concentrated beam of light upwards at 45° angle; and by using a simple method of triangulation, the height of clouds at night

(Concluded on page 163)



J. E. Whitbeck

# AMERICAN COMMERCIAL AIRPLANES

WITH its vast distances and widely separated cities and the demand for high speed in every branch of commerce the United States presents the greatest field in the world for commercial aviation development.

George F. McLaughlin

Bv

ons and elevators are differentially controlled, and the horizontal stabilizer is adjustable from the pilot's cockpit to allow alteration of trim.

One of the most important scientific and industrial advances this country has witnessed in the past two years is the creation of a number of various types of aircraft for use on our national airways.

At the present time privately owned commercial airlines are in daily operation between our most important business and industrial centers. This demand for efficient aircraft has resulted in the production of new types of airplanes, fostering the development of the aircraft engines which power them. Some of the prominent types are listed in the accompanying tables and illustrations, and a few of them are here briefly described in detail:

# ATLANTIC "TRIMOTOR" F-VII (FOKKER)

Three Wright "Whirlwind" engines totalling to 600 h.p. drive the F-VII at the rate of 125 m.p.h. The cabin accommodates eight passengers and the cockpit provides for two pilots. The cargo capacity is 493 cubic feet. Wing area 630 sq. ft. Disposable load 4,000 lbs. Paying load, 2,340 lbs. The landing speed is 50 miles an hour and the cruising speed 100 m.p.h. In the first minute the F-VII can climb to 860 feet. The engines are equipped with Eclipse starters and Hamilton or Hartzell propellers.

# ATLANTIC "UNIVERSAL" (FOKKER)

The single-motored "Universal" all-purpose monoplane is especially well adapted to use on air mail feeder lines. It carries a pilot and 4 to 6 passengers. Cargo space. 146 cubic feet. Wing area, 330 sq. ft. The disposable load is 1,500 lbs. and the pay load 800 lbs. Speed range 42 to 122 m.p.h. Cruising speed 100 m.p.h. Rate of climb 850 ft. per minute. The Wright "Whirlwind" J-4B engine is used, equipped with an Eclipse starter. The plane is convertible for use over land or water.

#### Buhl-Verville CA-3

Some of the features of the CA-3 are oleo and rubberdisc shock absorbers, steerable tail skid, alemite connections on all bearings, landing gear of split-axle type (will not "duck-walk"), standard Air Service throttles and gas system, and Standard Steel propeller. The landing speed is 45 miles an hour and the cruising speed 100 miles. A Wright "Whirlwind" engine is used. The rate of climb is 1,135 feet a minute. Two passengers or 25 cubic feet of cargo can be accommodated in the fuselage.

#### THE CURTISS "CARRIER PIGEON"

The "Carrier Pigeon" has been especially designed as a cargo-carrier for use on main-line mail and express routes. It has been designed with particular attention to reliability, easy maintenance, and low operating costs. Standardization and interchangeability of parts have been achieved wherever possible.

The wing cellule consists of four geometrically similar panels, uppers being interchangeable with lowers. Interplane struts are of streamline steel tubing.

All control surfaces, including ailerons, elevators, and rudder, are identical and interchangeable. In addition the stabilizer and fin are built up from identical parts. Ailer-

The fuselage is of welded steel tube, Warren truss, cloth covered. It contains the freight compartment, a fire-and-waterproof structure with 56 cubic feet capacity, and capable of carrying a thousand pounds of cargo. In addition there are two smaller compartments, one for light but bulky packages and another for pilot's effects, suitcases, and other similar cargo.

The landing gear is of the split type, using rubber compression discs mounted in a strut which is carried up to the lower wing. The tail skid is steerable to permit easy control while taxying.

The power plant consists of the 400 h.p. Liberty motor, supported in the usual Curtiss fashion on a detachable welded-steel mount, which also supports the tunnel radiator, electric starter and batteries. As on all Curtiss machines, a Curtiss-Reed duralumin propeller is used. Gasoline is carried in a tank suspended underneath the fuselage, with a small gravity tank in the upper wing.

The equipment includes complete electrical and nightflying installations, pressure fire extinguisher, and the usual parachute.

#### THE CURTISS "LARK" SERIES

The Curtiss "Lark" is a plane of medium power, designed for "feeder-line" mail and express service, primary training and general commercial flying. It is equipped with any one of three motors, the 200 h.p. Wright "Whirlwind," the 180 h.p. Hispano, or the 160 h.p. Curtiss C-6. All of these motors are well-known for their reliability and excellent performance. The general design of the "Lark" is one of simplicity and ruggedness throughout, with particular attention being paid to economy and ease of maintenance.

The design features of the "Lark," including interchangeable wings, split landing gear, steel fuselage, steerable tail-skid, etc., are similar to the larger prototype, the "Carrier Pigeon." Cockpits are arranged to carry 2 or 3 passengers comfortably in addition to the pilot, and an ingenious arrangement permits the forward cockpit to be transformed quickly into a cargo compartment. All models of the "Lark" can be equipped with interchangeable float and wheel landing gears.

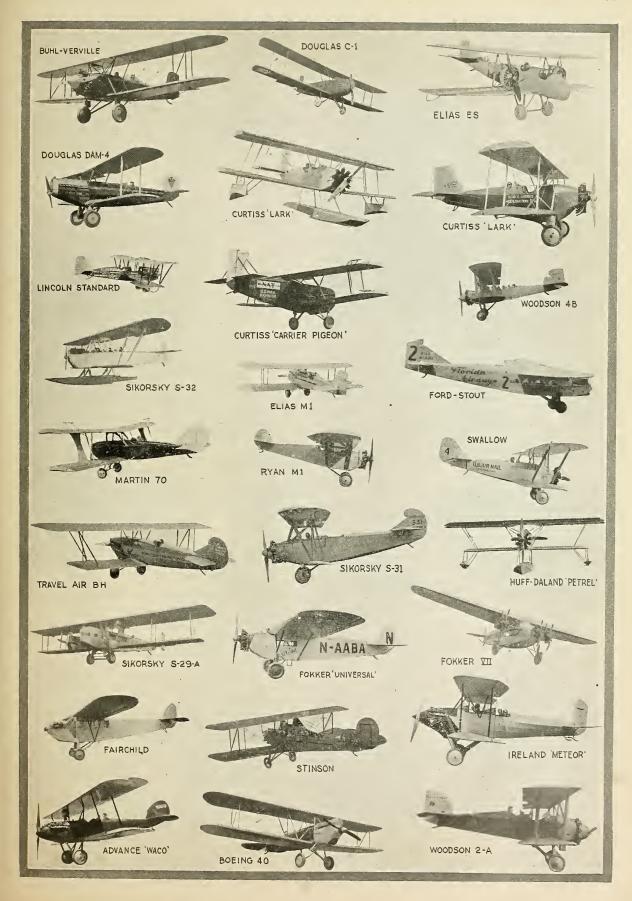
#### Douglas Mail Plane DAM-2

The mail compartment of 58 cubic feet has a capacity for 1,000 pounds of mail. It is located in the fuselage ahead of the pilot's compartment, lined bottom, sides, and ends with reinforced duralumin. It is sealed from the engine compartment to provide fire protection. The length of the mail compartment is six feet.

The mail compartment is provided with two quickly removable seats, permitting the carrying of two passengers seated well down in the mail compartment and protected from the air by windshields. Access to the compartment is provided by the use of aluminum covers over the top, arranged and constructed so that when passengers are carried part of the door may be folded down providing an ideal cockpit opening.

Performance: High speed 145 m.p.h.; stalling speed, 58 m.p.h.; landing speed, 55 m.p.h.; cruising speed, 110

(Continued on page 92)



#### (Continued from page 90)

m.p.h.; gas consumption (at 110 m.p.h.), 20 gals. per hr.; service ceiling, 17,000 ft.; rate of climb at ground, 1,100 ft. per min.

#### Douglas Transport C-1

The fuselage is constructed of chrome molybdenum steel tubing and swaged steel tie rods. The joints are welded.

All four sides of the engine section and pilot's bay (back to the front wing spar) are covered with readily-detachable aluminum cowling.

The engine section carries the Liberty engine and a nose-type radiator. Fire bulkheads separate the sections. The acting pilot is placed on the left side of the fuselage, and the relief pilot on the right. A single post and wheel type control is provided and the spacing of the seats, floor, cowling, etc., is so arranged that the two operators may change places in the air.

The passenger compartment has a clear cross sectional size of 46 in, width by 50 in, height. It is about 10 feet long. Access from the ground to this compartment is through two doors at the sides and rear of the compartment. The pilot's compartment is reached through the passenger compartment,

The six passengers' seats are readily removable to permit using this compartment for freight. The trussing in the horizontal plane of the lower longerons for two bays at the rear of the passenger compartment is so designed as to provide clearance for the lifting up into the fuselage from the ground of objects of the size of a Liberty engine. Two doors normally cover this hoist hole, which

may be folded up into the fuselage and against the rear of the passenger compartment.

A baggage compartment 4 x 4 x 10 feet is provided to carry any baggage for the passengers. Doors in this cover permit placing of the baggage when on the ground.

Six seats for passengers are normally provided, but a seating capacity of eight people in the present enclosed compartment may be readily provided.

#### THE DOUGLAS DO-2-SPECIAL

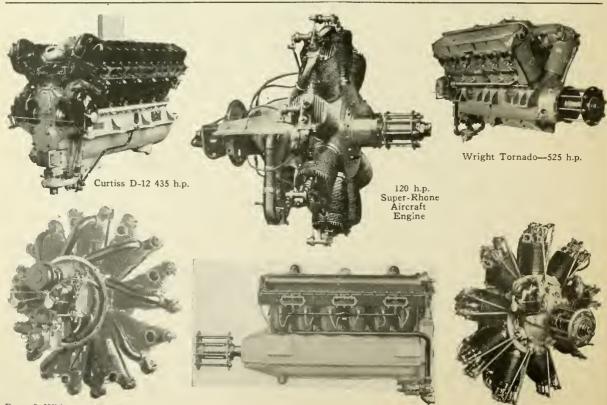
For business and pleasure the DO-2 with 400 h.p. Liberty engine has a cruising speed of 110 m.p.h. It has an area of 411 sq. ft. Wing loading 11.4 lbs. per sq. ft. Power loading 11.1 lbs. DO-2 special planes are now being used for rapid transcontinental trips and for hunting and fishing trips in northern Canada.

#### THE ELIAS M 1 MAIL PLANE

Droppable tanks, all-metal body structure, over-size tires and wide landing gear are structural points of merit in the Elias Mail Plane. This type is also suitable for transport service. A 420 h.p. Liberty 12 A engine furnishes the power, driving a specially designed Elias propeller. The speed range is 47 to 126 miles an hour. Rate of climb 1.650 feet a minute. Wing area 498 sq. ft.; wing loading 9.3 lbs. per sq. ft.; power loading 11.1 per h.p.

#### THE ELIAS E S

In the E S twin-motored commercial ship the axes of engines are set at an angle of 3 deg, to the longitudinal (Concluded on page 94)



Pratt & Whitney "Wasp"-400 h.p.

Packard Model 1A-2500 Aircraft Engine-800 h.p. Wright J4 "Whirlwind"-200 h.p.

## CHARACTERISTICS OF AMERICAN COMMERCIAL AIRPLANES

) <del></del>							
			Wing	Walaka	Useful		a
MINE OF MINERACTURED	Model	Engine	Span	Weight Empty	Load	High Speed	Cruising
NAME OF MANUFACTURER	Number	Used	(ftin.)	(pounds)	(pounds)	(mi. pr. hr.)	(hrs. or miles)
			, ,	(2		( pro mr.)	( and or three)
4.1 4: 6: 6	TIV O	C . OVE	20/ 0/	*000			100
Advance Aircraft Co	Waco 9	Curtiss OX5	29′-0″	1090	800	99	400 mi.
Aerial Service Corp	Mercury	Liberty 12	47′-1″	3640	1875	125	500 mi.
Aerial Service Corp	Mercury Jr.	Wright J4	32′-10 ″	1570	1020	130	
Alexander Industries	Eaglerock	Curtiss OX5	38'-0"	1100	800	90	
Atlantic Aircraft Corp	F VII	(3) Wright J4	62'-5"	4620	3500	125	6 hrs.
Atlantic Aircraft Corp	Universal	Wright J4	47′-0″	1500	1500	122	6 hrs.
Boeing Airplane Co	Type 40	Liberty 12	44'-2"	3425	7000	135	7 hrs.
Buhl-Verville Aircraft	Airster	Curtiss OX5	35′-8″	1380	765	95	5 hrs.
Buhl-Verville Aircraft	CA-3	Wright J5	35′-8″	1550	885	125	4.5 hrs.
Consolidated Aircraft Co	Seaplane	Wright J4	34'-6"	1895	870	105	
			41'-11"				500
Curtiss A. & M. Co., Inc.	Carrier Pigeon	Liberty 12		3603	2017	121	590 mi.
Curtiss A. & M. Co., Inc	Lark	Curtiss C-6	30′-8″	1550	870	114	4.5 hrs.
Curtiss A. & M. Co., Inc	Lark	Wright J5	30′-8″	1494	1212	117	5 hrs.
Curtiss A. & M. Co., Inc	Lark	Wright E2	30′-8″	1698	702	117	3.75 hrs.
Douglas Company	DAM-4	Liberty 12	39′-8″	2910	2058	145	650 mi.
Douglas Company	DO-2-Spec.	Liberty 12	39′-8″	2900	1780	140	8.5 hrs.
Douglas Company	C-1	Liberty 12	60'-0"	3900	3520	119.7	
G. Elias & Bros., Inc	M-1	Liberty 12	40'-0"	2840	1825	126	4.5 hrs.
G. Elias & Bros., Inc.	AJE	Liberty 12	44'-0"	2890	2070	125	1.0 113.
G. Elias & Bros., Inc.	ES (Twin)	(2) le Rhone	35′-0″	1568	1032	86	5 hrs.
Fairchild Corporation	Monoplane	Curtiss OX5	41'-0"	1585	360	90	4 hrs.
			58'-4"				
Ford-Stout	Monoplane	Liberty 12	30 -t	3638	2379	115	4 hrs.
Hess Aircraft Co	Bluebird	T.7	50'-0"		800		3
Huff-Daland & Co	HD-31	Liberty 12		3300	3200	110	4 hrs.
Huff-Daland & Co	Panther	Wright J4	29'-4"	1500	900	120	3 hrs.
Huff-Daland & Co	Transport	(2) Wright J4	57′-0″	3300	3020	110	7 hrs.
Huff-Daland & Co	Petrel V	Wright J4	33′-0″	1600	1000	110	6 hrs.
Ireland Aircraft, Inc.,	Meteor	Curtiss OX5	30'-0"	1253	910	98	510 mi.
Kinner A. & M., Corp	KE-5	Lawrance	31'-6"	700		85	
E. M. Laird Airplane Co	Mail Plane	Wright J4					
Lincoln Standard	Sport	Anzani 35	20'-0"	370	230	90	250 mi.
Lincoln Standard	LS 5	Hispano 150	44'-7"	1735	1187	93	310 mi.
Martin Company.	Model 70	Wright E4	38'-0"	2133	1092		
	Fleetwing	Curtiss C6	38'-0"	1802	1110	112	550 mi.
Piteairn Aviation, Inc			. 36'-0"			110	3.5 hrs.
Ryan Airlines, Inc	M-1 (Mail)	Wright J4			600	135	
Ryan Airlines, Inc	Monoplane	Super Rhone	36'-0"			*****	
Ryan Airlines, Inc.	Cloudster	Liberty 12	701.6"		111111	110	
Remington Burnelli		(2) Atlantic	78′-0″	9450	6150		
Sikorsky Eng., Corp		(2) Liberty	69′-0″	7500	6100	120	6 hrs.
Sikorsky Eng., Corp		Wright J5	45′-0″	1750	1200	110	5 hrs.
Sikorsky Eng., Corp		Liberty 12	58'-4"	3400	2200	135	6 hrs.
Sikorsky Eng., Corp.		Anzani	32'-0"	1000	550	130	3.5 hrs.
Stinson Aircraft Corp.		Wright J4	35'-10"	1700	1200	125	500 mi.
Swallow Airplane Mfg. Co		Curtiss OX5	32'-0"	1300	950	95	4 hrs.
Swallow Airplane Mfg. Co	Mail Plane	Wright J4	J2 0		350		
Travel Air Mfg. Co	B	Curtiss OX5	33′-0″	1300	750	100	4 hwa
Trovol Air Mfg. Co			42'-0"			100	4 hrs.
Travel Air Mfg. Co		Wright J4B	33'-0"	1600	1400	120	4 hrs.
Travel Air Mfg. Co	BW	Wright J4B		1350	900	135	4 hrs.
Travel Air Mfg. Co		Hispano 180	33'-0"	1450	800	125	4 hrs.
Waterhouse Aircraft		Wright J4	36′-0″	1540	910	138	5 hrs.
Waterhouse Aircraft		Wright J4	30′-0″	1200	850	100	4.5 hrs.
Woodson Engineering Co	Type 3-A	Salmson 200	32′-0″	1450	1430	135	5.25 hrs.
Woodson Engineering Co		Salmson 200	41′-6″	1940	1620	110	5 hrs.
Woodson Engineering Co		Salmson 200	32′-0 "	1590	1600	130	3.5 hrs.
		230		-0.0			

## CHARACTERISTICS OF AMERICAN AIRPLANE ENGINES

NAME OF MANUFACTURER	Manufacturer's Model Number	Horse power	Normal r.p.m.	Cylinder Bore (inches)	Cylinder Stroke (inches)	Weight Dry (pounds)	Weight (lbs/h.p)
Curtiss A. & M. Co., Inc. Detroit Aircraft Engine. Fairchild-Camenez Corp. Packard Motor Car Co. Roberts Aero Industries. Steel Products Eng. Co. Tips & Smith, Inc. Wright Aeronautical Corp. Wright Aeronautical Corp. Wright Aeronautical Corp.	C6-A D-12 V-1400 R-1454 Rickenbacker 447-B 2A-2500 (direct) 2A-2500 (geared) 2A-1500 (geared) 2A-1500 (geared) 2A-1500 (direct) Wasp RAI Rausie E-6 Z-1 Super-Rhone Whirlwind Tornado	100 160 435 500 400 60–80 150 800 800 600 600 600 400 100 175 120 200 550–650 25–30	1400 1750 2300 2100 1650 1620 1200 2000 2500 2500 2500 2500 1900 1650 1450 1800 2000 2500	4.5 4.5 4.875 5.625 4.875 5.625 6.375 6.375 5.375 5.375 5.375 5.375 4.25 4.125 4.5 5.75 3.75	5 6 6.25 6.5 3.5 6.5 5.5 5.5 5.7 4.25 6.5 5.5 5.7 5.7 6.5 5.3 5.7 6.5 6.5 5.3 5.7 6.5 6.5 6.5 6.5 6.5 6.5 6.5 6.5 6.5 6.5	435 420 680 680 830 175 360 1150 1370 770 870 750 650 250 525 340 480 1166 89.5	4.35 2.36 1.70 1.30 1.78  1.44 1.71 1.28 1.45 1.25 1.625 2.9 3 2.8

### (Concluded from page 92)

center line to offset the effect of using one engine alone. The slip of the propeller on the tail surfaces produces a corrective moment. The seating capacity is four passengers and pilot. Two Le Rhone 80 h.p. engines are used. The wing area is 385 sq. ft.; wing loading, 6.75 lbs. per sq. ft.; power loading, 16.2 lbs. per h.p. A speed range of 45 to 86 miles is obtained. Climb, 900 feet per minute.

## HUFF DALAND "PETREL" MODEL V

This plane is a cantilever biplane with all steel tubular fuselage and split axle landing gear. All gasoline is carried in the upper wing. It is a modification of the H-D cotton dusting plane, may be equipped with a pontoon and wing floats for over-water flying and carries 3 passengers. Cargo capacity, 28 cubic feet. Wing area, 296 sq. ft. Wing loading, 8.8 lbs.; power loading, 11.8 lbs. per h.p. Speed range, 45 to 110 miles. Climb. 1,200 feet per minute. A Wright E or J-4 may be installed.

## HUFF DALAND "PANTHER"

The "Panther" is designed for mail, passenger-carrying and sport. Like the "Petrel" the Wright E 180 h.p. or J-4 "Whirlwind" 200 h.p. engines may be used. The speed range is 50-120 miles an hour. Cargo capacity, 24 cubic feet.

### THE RYAN M-1

The Ryan M-1 cruises at 115 miles an hour with a 600-pound pay load. It will take this load off the ground with a run of 390 feet and climb to 1200 feet the first minute. A high speed of 135 miles is attained and it can be throttled down to 45 miles an hour for a short-run landing.

### THE SIKORSKY S-29-A

Among the most prominent commercial planes, the Sikorsky S-29-A has probably covered more territory than any other commercial ship in its class. Equipped with two 400 h.p. Liberty motors, it can carry 16 passengers at a speed of 120 miles an hour. It has a wing loading of 10.8 lbs. per h.p. and a power loading of 16.9 lbs. In the first minute it can ascend to 550 feet. Its landing speed is 56 miles an hour.

### SIKORSKY S-31

For photography, mail and passengers, with interchangeable water and land gear, the S-31 has a 70 cu. ft. cargo space providing ample room for 900 lbs. pay load. Wing area. 366 sq. ft. Wing loading, 8 lbs.; power loading, 15 lbs. Speed range, 35 to 129.25 miles per hour. Cruising speed, 110 m.p.h.

### SIKORSKY S-32

Pontoons for alighting on the water may be used with the S-32 mail and passenger plane. Four passengers and pilot are carried. The total wing area is 605 sq. ft. Wing loading, 10.9 lbs. Power loading, 13.5 lbs. A speed range of 40 to 130 miles is recorded. With a full load a height of 800 feet is reached in one minute. A cargo compartment of 80 cubic feet is provided.

## SIKORSKY S-33

Two passengers and pilot can be carried in the smallest Sikorsky plane, the Anzani-motored "messenger." It has a wing area of 182 sq. ft.; wing loading, 8.5 lbs. The power loading is 12.9 lbs. Speed range, 40 to 130 m.p.h. Rate of climb, 1,000 feet per minute.

### STINSON MAIL PLANE

The Stinson mail and passenger plane is convertible for land or water flying. A Wright J-4 engine is used. Four passengers can be carried in the cabin which has a capacity for 50 cubic feet. Wing area, 350 sq. ft. Wing loading, 8.28 lbs. per sq. ft.; power loading, 14.5 lbs. Speed range, 45 to 125 m.p.h.; cruising speed, 105 m.p.h. Rate of climb, 800 feet per minute.

## TRAVEL AIR 3-PASSENGER SERIES

The Model BW with Wright "Whirlwind" has a cargo capacity of 22 cubic feet. Wing area, 296 sq. ft.; wing loading, 7.6 lbs.; power loading, 11.2 lbs. With a full load, the rate of climb is 1,300 ft. per minute. Speed range, 40 to 135 m.p.h.; cruising speed, 110 m.p.h.

Similar in dimensions to the BW, the BH is equipped with the Wright Model E 180 h.p. engine and the Model B is equipped with the Curtiss OX5. The BH has a speed of 40 to 125 m.p.h.; a cruising speed of 105 m.p.h. and a climbing rate of 1000 feet a minute. The B has a speed range of 37 to 100 m.p.h.; a cruising speed of 85 mlies and a climb of 500 feet a minute.

## TRAVEL AIR MODEL C W

Powered by a Wright "Whirlwind," the 5-passenger Travel Air makes a speed of 120 miles an hour. Landing speed, 40 miles; cruising speed, 100 miles. Rate of climb, 800 feet a minute. Wing area, 384 sq. ft. Wing loading, 7.8 lbs.; power loading, 15 lbs. per h.p. The CW has a cargo capacity of 60 cubic feet.

## WATERHOUSE "CRUZAIR"

Mail or pilot and 2 passengers may be carried in the "Cruzair" equipped with the Wright "Whirlwind" J4B. Cargo capacity, 50 cubic feet. Wing area, 240 sq. ft. Wing loading, 10.2 lbs.; power loading, 12.25 lbs. Speed range, 45 to 138 miles.

### Waterhouse "Romair"

A speed range of 45 to 100 miles an hour is attained in the "Romair." It is powered with the Wright "Whirlwind" engine. Two passengers and pilot or 27 cubic feet of cargo may be carried. Wing area, 265 sq. ft. It will climb to 800 feet in one minute.

## Woodson Type 2A

The 2A is designed for inter-city passenger carrying. A 230 h.p. Salmson 9zm radial engine is used. Seats are provided for four passengers. Wing area, 352 sq. ft.; wing loading, 7.1 lbs. Power loading, 12.1 lbs. High speed, 120 miles an hour. Rate of climb, 1500 ft. per minute.

## Woodson Type 3-A

Mail, express, or five passengers may be carried in the 3-A. The 230 h.p. Salmson air-cooled radial engine or the 150 h.p. Hispano water-cooled engine may be installed. The wings have a total area of 352 square feet.

### WOODSON TYPE 4-B

Seven passengers can be carried in the 4-B transport. A Salmson 230 h.p. engine is used. The wing loading is 8.3 lbs.; power loading, 15.4 lbs. Rate of climb, 1000 feet a minute.

## AIR MAIL OPERATORS' VIEWPOINT

## WESTERN AIR EXPRESS, INC.

By HARRIS M. HANSHUE President and General Manager

FEW weeks ago, press dispatches quoted a high postal official as saying that the contract air mail route between Los Angeles and Salt Lake City

is the best supported line of its kind in America, and that the government is well satisfied both as to volume of mail and details of operation on this far-western air-

We of the Western Air Express, Inc., are pleased and grateful. Pleased that our efforts to launch a commercial air line have been thus early crowned with an imminent success, and grateful to the progressive, industrious, air-minded people of Southern California who have made possible our close approach to a profit-earning basis.

But we are not satisfied—if satisfaction means complacency with conditions as they are. We want more mail, more revenue

and whatever improvement may be effected in operations so that by better service and greater volume we can establish ourselves as a transportation system earning a fair financial return on our investment. We believe such an eventuality is not remote. It is, in fact, just around the corner. It appears to be, at this writing, much closer than it looked previous to April 17, when our line went into operation.

Since that time, business and industry of Southern California have developed many new uses for the aerial post; uses, new at least to this section and to our original conception of air mail. This, and increasingly general acceptance of the service by individual mailers of this region has resulted in a steady increase in the daily average volume of air mail flown over our line.

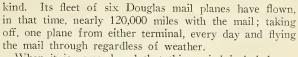
Roughly, May mail increased eleven percent over that of April, and June nearly eight per cent over May. July promises to exceed all.

To increase our immediate revenue pending development and growth of air mail volume, Western Air Express, Inc., on May 23-five weeks after its first mail flight—inaugurated daily passenger service by air between Los Angeles and Salt Lake City. This, we believe, is the

first instance of an established commercial airway in America offering a passenger service which fits into the existing transportation system of the nation.

Passenger accommodations are offered in the daily mail planes, each of which has seats for two. Our mail schedule is such that both eastbound and westbound planes connect at Salt Lake City with fast trains east and west. Thus, by flying the 660-mile airway passengers not only escape the heat and grime of the American desert but actually cut approximately nineteen hours from the train journey time between Los Angeles and any eastern

It should be of more than passing interest to those concerned with aviation and its development as a medium in commerce that this line has operated nearly ninety days without default and without mishap of any



When it is remembered that this period included several weeks of equinoctial storms which interfered seriously with aerial activities in all sections of the nation,

the physical performance of this line leaves little to be expected.



Harris M. Hanshue

## NINETY DAYS WITH FLORIDA AIRWAYS By H. D. Dennis

URING November, 1925, Major Reed M. Chambers, president of Florida Airways Corporation, formerly commanding officer of the 94th Aero Squadron, First Pursuit Group, surrounded with the nucleus of the Florida Airways Corporation, "hopped off" from

the Ford Airport, Dearborn, Michigan. with a fleet of Airways planes which then consisted of four Ford-Stout, 6-passenger

monoplanes and one Curtiss "Lark" biplane.

Adequate landing fields were constructed at Jacksonville, Tampa, Fort Myers and Miami and on April 1, the inaugural trip was made over the contract route No. 10, the 495-mile flight being completed on schedule. Approximately 12,000 pieces of mail were carried the opening day.

During April, Major Chambers increased the equipment of the organization purchasing two Travel Air OXX6 planes, the large Ford monoplanes being used on the Tampa-Fort Myers-Miami route and the smaller craft on the Tampa-Jacksonville route. Hangers, mechanics work sheds and passenger waiting rooms were established at Tampa, Jacksonville and Miami. Early in August, the new Jacksonville municipal airport will be completed, offering a landing field approximately one-half mile by threequarters mile in size and modern equipment to cost \$8,000. Miami is rapidly completing a new municipal airport for that city known as the Fifty-fourth Street Field. The city expects to expend approximately \$10,000 on this field in the endeavor to give Miami one of the most modern airports in the South. Fort Myers has completed the runways for their municipal airport where 10-minute stops are

> made enroute from Tampa to Miami, the landing field being 3,000 feet by 2,800 feet and located adjacent to the main

boulevard entering the city.

In addition, one hundred temporary landing fields have been charted along the routes, the Airways' program calling for two or more emergency landing fields in every county throughout the state.

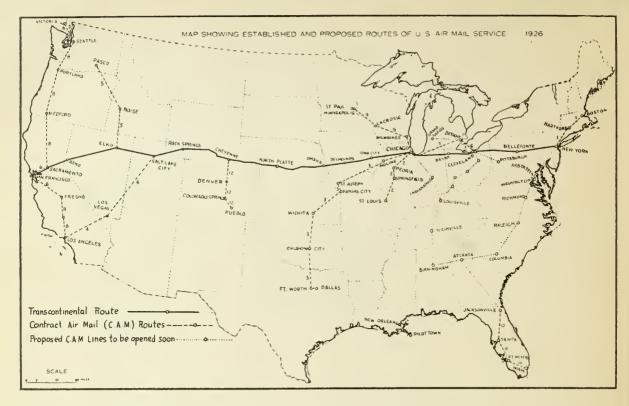
Following sixty days of successful air mail flying at an efficiency of 97 per cent, the Airways company inaugurated the first daily air passenger service in the South on June 1. During the inaugural month, 148 persons paid passage over the route. During the first ten days of July, 142 persons had paid passage with a large reser-

vation list on file for the forthcoming two weeks. Two flying schedules are offered passengers, a "Business Men's"



Lieut. John Harding, Jr. and Major Reed M. Chambers.

(Continued on page 154)



## AIR MAIL ROUTES IN THE U.S.

THE TRANSCONTINENTAL ROUTE

New York-San Francisco (2,664 miles) gov.-operated

HE first regular air mail service in the United States was established by our government between New York City and Washington, D. C., on May 15, 1918. This was discontinued on May 31, 1921. A Chicago-St. Louis Route was inaugurated by the government on August 16, 1920; and, discontinued June 30, 1921. The Twin Cities (Minneapolis and St. Paul-Chicago Route began December 1, 1920; and discontinued June 30, 1921. Through these failures the government realized that so much time was lost in getting to and from the fields that the advantages of air over rail for short distances were negligible.

The Post Office Department was determined to fly its

mail across the continent. The first leg of the transcontinental route was therefore inaugurated between Cleveland and Chicago, May 15, 1919; a second leg, New York to Cleveland, was opened July 1, 1919; third leg, Chicago to Omaha, May 15, 1920; and the last leg, Omaha to San Francisco, on September 8, 1920.

For the first few years it was operated during daylight only. Under Col. Paul Henderson, then second assistant Postmaster General, the 885-mile stretch between Chicago and Cheyenne, Wyo., was lighted for night flying. Illumination soon was extended between Cleveland, Ohio, and Rock Springs, Wyo., a distance of 1,900 miles and on July 1, 1924, continuous operation (night and day) from New York to San Francisco began.

(Continued on page 160)

## Time Table of Service on Government-Operated Air Mail Routes

I.eave Arrive	
	Leave Arrive
ew York (Hadley Field) 11.00 a.m. E. ellefonte (12.50 p.m. E. cleveland (12.50 p.m. E. cleveland (12.50 p.m. E. cleveland (12.50 p.m. C. cleveland (12.50 p.m. C. cleveland (12.50 p.m. C. clicago (12.00 p.m.	Reno         10.30 a.m. P.           Elko         12.40 p.m. P.         Salt Lake City.         2.45 p.m.           Salt Lake City         4.05 p.m. M.         Cheyenne         7.45 p.m.           Cheyenne         8.00 p.m. M.         Omaha         12.45 a.m.           Omaha         1.00 a.m. C         Chicago         5.45 a.m.           Lowa City         2.30 a.m. C         Cleveland         1.400 a.m.           Cleveland         12.15 p.m. E.         New York (Hadley Field) 445 p.m.
ılt Lake Čity 9.20 a.m. P. ko 11.15 a.m. P. Reno 1.30 p.m. P. eno 1.45 p.m. P. keramento 2.45 p.m. P. San Francisco 4.30 p.m. P.	(M)—Mountain Time (P)—Pacific Time

## Time Table of Service on CONTRACT AIR MAIL ROUTES now in Operation

Route C. A. M. No. 1—Boston, Mass.; Hartford, Conn.; Ne Connecting at New York with the (Overnight) Air Mail Service hetween N	
SOUTHBOUND—(Daily except Sunday and National Holidays)	NORTHBOUND— (Daily except Sunday and National Holidays)
Leave (Eastern Time) Arrive (Eastern Time)	
Boston         5.00 p.m         New York         7.50 p.m	New York
Route C. A. M. No. 2-Chicago, III.; Peoria, III.; Spring	field, Ill.; St. Louis, Mo. (278 miles each way)
Connecting at Chicago from the N. Y. & Chicago (Overnight) Air Mail Rou	
SOUTHBOUND—(Daily except Sunday and Monday)  Leave (Central Time) Arrive (Central Time)	NORTHBOUND.—(Daily except Saturday and Sunday) LEAVE (Central Time) ARRIVE (Central Time)
Chicago upon arrival of plane from N. Y. Peoria	St. Louis
Chicago upon arrival of plane from N. Y. Peoria         7.15 a.m.           Peoria         7.25 a.m.         Springfield         8.05 a.m           Springfield         8.15 a.m.         St. Louis         9.15 a.m	Springfield         5.05 p.m.         Peoria         5.45 p.m.           Peoria         5.55 p.m.         Chicago         7.15 p.m.
Route C. A. M. No. 3—Chicago, Moline, Ill.; St. Joseph Fort Worth, Dallas, Tex (987 miles each way)	Kansas City, Mo.; Wichita, Kans.; Oklahoma City, Okla.;
Connecting at Chicago from the N. Y. & Chicago (Overnight) Air Mai	Route.
SOUTHBOUND—(Daily)	NORTHBOUND—(Daily)
Leave (Central Time) Arrive (Central Time) Chicago upon arrival of plane from N. Y. Moline	
Moline	Fort Worth
St. Joseph         10.35 a.m.         Kansas City         11.08 a.m           Kansas City         11.18 a.m.         Wichita         1.08 p.m           Wichita         1.18 p.m.         Oklahoma City         2.55 p.m	Wichita
Oklahoma City 3.05 p.m	St. Joseph 2.40 p.m
Fort Worth. 5.15 p.m Dallas 5.35 p.m	Moline 5.40 p.m
Route C. A. M. No. 4—Salt Lake City, Utah; Las Vegas, Nev	.; Los Angeles, Calif. (600 miles each way)
Connecting at Salt Lake City from the N. Y. & San Francisco (Transconti	
WESTBOUND—(Daily)	EASTBOUND—(Daily)
LEAVE (Pacific Time) ARRIVE (Pacific Time) Salt Lake City	Los Angeles
Las Vegas 2.25 p. mLos Angeles 5.25 p.m.	Las Vegas
Route C. A. M. No. 5-Elko, Nev.; Boise, Idaho; Pasco, Was	h. (435 miles each way)
Connecting at Elko, from the N. Y. and San Francisco (Transcontinental	
WESTBOUND—(Daily except Monday)	EASTBOUND—(Daily except Monday)
LEAVE (Pacific Time) ARRIVE (Pacific Time) Elko	Leave (Pacific Time) Arrive (Pacific Time) Pasco
Boise 2.50 p.mPasco 6.00 p.m	Boise 9.20 a.m Elko 12.30 p.m.
Posts C A M No 6 Claveland Objet Detroit Mich (	11 miles each way)
Route C. A. M. No. 6—Cleveland, Ohio; Detroit, Mich. (Connecting at Cleveland from the N. Y. & San Francisco (Transcontinent:	
Connecting at Cleveland from the N. Y. & San Francisco (Transcontinent: WESTBOUND—(Daily except Sundays and National Holidays)	d) Air Mail Route.  EASTBOUND—(Daily except Sundays and National Holidays)
Connecting at Cleveland from the N. Y. & San Francisco (Transcontinent:  ### WESTBOUND—(Daily except Sundays and National Holidays)  LEAVE (Eastern Time) ARRIVE (Eastern Time)	Air Mail Route.  EASTBOUND—(Daily except Sundays and National Holidays) LEAVE (Eastern Time) Arrive (Eastern Time)
Connecting at Cleveland from the N. Y. & San Francisco (Transcontinent:  ### U'ESTBOUND—(Daily except Sundays and National Holidays)  Leave (Eastern Time) Arrive (Eastern Time)	d) Air Mail Route.  EASTBOUND—(Daily except Sundays and National Holidays)
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Boston Airport, Photo Courtesy of U. S. Navy.

HAT facilities are requisite for an airport and how does a city get on an airway? This question is being propounded daily by many disappointed

cities whose vision on the horizon of universal achievement has failed to transcend the smoke of their local industrial and com-

mercial prosperity.

The future airways of the United States are at the present time a matter of conjecture, as air traffic other than air mail and military flying is just beginning to follow definite routes. The coördinated activity of all cities along a probable air route will facilitate and induce a greater volume of air traffic to each but it is an axiomatic certainty that an airportless airway will be like a water pipe without faucets. The flow of air traffic will stop only where proper provision has been made.

From the cow pasture landing fields of the gypsy flyer to the 3608 recognized airports and landing fields now established

throughout the United States is a gratifying achievement, though only fairly under way at the present time, since every city of consequence should have suitable landing facilities.

Following the world war many organizations with an impetuous program to establish landing fields everywhere made beautiful "take offs" in the race to achieve this end only to "crack up" in the wilderness of public indifference.

With no organization extant financed for this specific mission the cradle was left on the doorstep of the War Department whose previous help to the railways and waterways foretold similar nourishment for the new infant. The Airways Section of the Army Air Service thus came into being and has since been the recognized official clearing house for data on airways and landing fields in the United States and its possessions.

The War Department having aided another transporta-

## By Lieutenant Donald G. Duke

Chief. Airways Section, U.S. Army Air Service



tion infant to stand upon its own legs, now sends it forth, perchance to rival in importance its older brothers. The non-military part of this activity will in all probability be

transferred to the Department of Commerce for administration under its new Bureau of Civil Aviation authorized by the 69th Congress' Air Commerce Act of 1926.

It is gratifying to learn that responsibility for civil aviation development under the Department of Commerce is to be placed on personnel experienced in air operations, the lesson having been learned that the airmen's problems can best be solved by airmen—three dimension thinkers.

The foresight of many cities both large and small in establishing airports when planes were seldom seen is bringing its own reward through national acclaim and a steady increase in air traffic to and from other points. The benefits to be derived,

the potential revenue, the maintenance cost, were secondary considerations subordinated to the civic pride and responsibility of those communities in aiding the development of commercial aviation as an important factor in our national defense.

Airports differ from landing fields in much the same manner as harbors differ from roadsteads and railway terminals differ from outlying stations.

Each has its relative importance as a contributing factor to transportation. The first class airport like a good harbor or a railway terminal has all essential facilities for the safety, comfort and convenience of its patrons. Having been provided with luxury in travel to a high degree the American public will accept no lesser standard in the new and faster air travel, indeed it may demand greater comfort since rates will be higher in proportion to time saved.

It is reasonable to suppose that the main airways of the

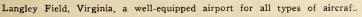
ultimate network will parallel lines of communication and transportation already established. Although an airway represents a straight line between two airports, the topography of the country traversed, the prevalence of inclement weather, the sparseness of inhabitants and the availability of convenient landing fields are often determining factors in the location of the routes flown. While the Air Commerce Bill referred to above authorizes the designation and establishment of civil airways, including the operation and maintenance of all necessary air navigation facilities, it does not provide for direct Federal aid in establishing airports or landing fields. This is a responsibility devolving upon the individual cities to accomplish as best becomes their circumstances. Many airports have been

established through reclamation of marshy land, others have been purchased outright or by bond issue, and conversion of unused city property or park areas has been another method. These airports after being established are operated and maintained by direct city management, by a holding company or through concessions or a combination of various methods no two of which seem to be exactly the same.

The keen rivalry between cities for recognition as air centers has been waged with characteristic acumen. Some years ago two Oklahoma cities were bidding for air traffic between the middle west and south. Catering to the convival habits of tired and hungry airmen, guest cards were mailed to all known pilots by the smaller of these cities. A new type of bargain day attracted many strange pilots through the medium of free transportation, reduced hotel rates, courteous treatment and genuine hospitality. Good news travels fast and this city today enjoys about 90 per cent of all air traffic in its general direction. This practice has since been followed by other cities with good results.



Photo by U. S. Army Air Service.



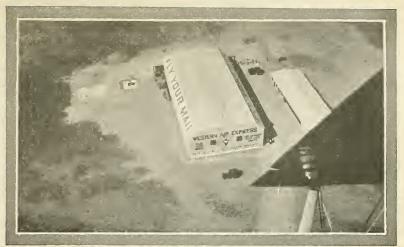


Photo by Dr. F. A. Carpenter. Los Angeles Western Air Express Port, from a ship spiralling at 500 feet.

AIDS TO NAVIGATION

There is no danger in air navigation which cannot be eliminated by adequate precaution. Navigation along our airways must be safeguarded in the same manner that similar facilities have been provided for ocean, lake and inland waterways. Scheduled night flying has more than doubled the efficiency of the New York to San Francisco air mail route. Beacon lights, in-between lights, landing field flood lights, and special equipment on planes have made practical a performance that must be adopted by commercial air transportation to successfully compete with the railways. The well-equipped airway in addition to terminal airports preferably 200 miles apart, intermediate landing fields 50 miles apart and emergency landing fields at frequent intervals, each equipped with beacon lights correspondingly powerful, should have a dependable communications system to report the progress of all traffic enroute similar to the method employed by the railway dispatcher and to furnish information on the weather conditions along the entire route. Aerial identification of cities and towns aids the pilot in following the map flight line, particularly in bad weather. Many municipalities, advised of its value,

have willingly painted the names of their cities in 6 to 12 foot letters on the roofs of conspicuous buildings with colors of contrasting value. Descending from an hour's flight above clouds or through a storm without sight of land and depending only on the compass, it is a grand and glorious feeling to determine one's whereabouts through the legible name on a roof below. Though not so sporty this method is decidedly safer than the old habit of diving at the railway station hoping to read the name on the small sign. Life has been sacrificed and valuable equipment destroyed because an important aid to navigation was lacking. Welltraveled highways furnish excellent landmarks for the airman particularly at night when innumerable automobile headlights point their shafts of brilliance toward cities dimly outlined in the distance. With snow on the ground prominent landmarks forle into

(Continued on page 157)

## ATERO DIGEST

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No 2

### BUILDING A FIRM FOUNDATION

RESIDENT COOLIDGE called Secretary Wilbur to his summer camp especially for a discussion of aviation, and after Wilbur, chief of the Nation's naval flyers, left, Edsel Ford, apostle of the all-metal commercial air carriers, was invited into consultation. These conferences have followed many talks with experts in aerial effort. Apparently those with foresight who have worried lest the President prove to be uninterested in the national air effort will be agreeably disappointed, and those hoping that he might not be will discover with a shock their error some morning when they pick up their newspapers

Nobody need worry lest Calvin Coolidge be unmindful of aviation's import to the nation. He is the first American President to be confronted with this special momentous problem in its entirety. Pioneers must move with caution.

Calvin Coolidge is not the sort of architect to build the steeple before he has laid a sound foundation for the edifice, though the foundation may not show, if well-built will support the structure.

The President's program of general economy doesn't include an economy of thought—that he spends lavishly—and the fact that he talks little gives him more time for the expenditure of his thoughts.

The President has shown that he gets facts first, then acts, then talks, and we imagine that his actions with regard to aviation will speak louder than any words which later he may utter with regard to them.

It is Aero Digest's firm conviction that the structure he erects will be entirely creditable—it may even be magnificent

### DAVISON INSPIRES CONFIDENCE

TRUBEE DAVISON who on July 16 took the oath of office and assumed his duties as the War Department's First Assistant Secretary for Aviation apparently had no preconceived ideas on the administration of the secretaryship, and he has inspired a great amount of coufidence in the Air Service by his comment: "One matter that I have decided on is that every suggestion, through the proper channels, from the field service will be given proper consideration and will be investigated.

"In cases where such action seems warranted I expect to give my personal attention, and if it seems advisable I will visit the field and get first hand information as to conditions.

"Naturally, it will be impossible in every instance to meet all the demands for improvements, especially where a greater expenditure of funds will be required, but I want the Air Corps to feel that constructive suggestions are welcome."

This attitude of the Secretary will assure hearty cooperation on the part of the Service and will assist in making them feel that they are now members of Uncle Sam's immediate family and not step-children as they have been led to believe by the little attention paid to their requests in the past..

## A SUGGESTION TO MR. HOOVER

A appointment of great importance will be that of the Assistant Secretary of Commerce to be in charge of Commercial Aviation. Mr. Coolidge doubtless will name for his secretaryship whatever man may be recommended by Mr. Hoover, for Hoover and the new man will need to work together in continual harmony and singleness of aim. Therefore Mr. Hoover doubtless at the present moment is examining with his well-known caution the qualifications of the different individuals who are available for this very important position. Perhaps it may be that among those now under consideration is John Elmer Whitbeck, former Division Superintendent of the Air Mail. If this is not the case, Aero Digest respectfully suggests that to his name some thought be given.

This remarkable and energetic young engineer was born in Geneva, New York, March, 1878. After his regular schooling, he gave a year to medical education. Discovering his natural bent, he switched to engineering with

great success, for his record since then shows important service of two years with the Walker Steam Car Company, then a year with the Maxwell Motor Company, then five years with the Engineering Division of the Navy, and then the war period with the Curtiss Aeroplane & Motor Co.

In 1919, Mr. Whitbeck served with the Aviation Section of the Army, and in 1920 became Chief Draftsman of the Fairbanks-Morse Co.

But this list of billets doesn't give a succinct statement of his aviation activities. Briefly, they are: 1911 to 1915, U. S. Navy; 1916, Curtiss Company; 1916-1917, U. S. Inspector of the Newport News Flying School. He was made First Lieutenant in the Air Service Signal Corps, November 1, 1917, and was given the Captaincy which he now holds in 1920.

Practical experience is necessary. John Elmer Whitbeck has it,



EVENTUALLY-WHY NOT NOW?

## A NOD AND A WINK

HEN I moved to New York I intended to live a quiet secluded, literary, and mildly alcoholic life. From my home I can see the calm, majestic beauties of the Hudson, which soothe me; and the swatting efforts of sundry golfers on the nearby links, which amuse me. My one connection with civilization is the subway; and by the recent strike thereon I have been completely iso-

lated. Thus, very happily, I have led the life of a recluse, spending in lazy and contented contemplation those hours which more avid humans devote to bustling about among their fellows.

However, on two occasions I have been most distressingly jarred out of my Thoreauesque placidity, and have been forced, much against my will, to journey to Washington, Brooklyn, Rockaway, and other out of the way places in search of information for the young lady editor of Aero Digest. Now, I do not disparage this young lady. She is very charming, very estimable, but intensely annoying. I would rest; she will not allow me. On other points we agree, pleasantly; on this one we disagree, violently.

No sooner had I returned from Washington, where I made a complete survey of our National Defense which was published in July Aero Digest; no sooner had I sunk exhausted in a chair, than this indefatigable editor would send me bounding off to Mud Flats, Missouri, to interview Congressman Leech McBarnacle on the development of commercial aviation.

I protested vehemently. My little home on the Hudson, near the golf links and the city dump, awaited me. My bootlegger had been in touch with a Mr. Walker, of Scotland, and had left me part of the results of his negotiations. Clearly, rest, relaxation, was indicated.

But the lady insisted, so off I rushed to Mud Flats to escape her importunities. When I arrived there, the little town seemed deserted. But the station-master, kindly soul, informed me that every one was in the local Opera House to hear Congressman McBarnacle speak on aviation. Thither I hurried, arriving just as the Congressman stood up amid tremendous applause that fairly rattled the windows, and perhaps even rustled the mortgage on the house.

Congressman Leech McBarnacle, I saw, was a large, ponderous looking man, with that air of genial well-being that is acquired only by long residence in Washington at the people's expense. In fact, I knew that he had represented that district in Congress since back in the old days when first that great and glorious institution adopted for their emblem a statue of Sitting Bull on a pork barrel. He has shaken every one of us by the hand, patted every small boy on the head, and kissed every baby in the district, wet or dry. And if this does not indicate the Statesman, what does?

Seating myself at the rear of the hall, where I could escape if necessary, I opened my note-book and proceeded to take down in shorthand what Congressman McBarnacle was about to say.

"My dear friends," he began in mellifluous tones, and beaming upon us with pre-election joviality. "I want to speak to-night on Aviation, Disarmament, and Prohibition. Every street corner holds its little group of thoughtful citizens discussing these important topics, the while keeping an ever-watchful eye on the latest styles in ladies'

Aviation Relief Bill
By

by baldwell

wear, as displayed in strictest moderation by the pulchritudinous feminity of this illustrious land, for which Washington froze at Valley Forge in 1776."

(Loud cheers from the gallery.)

"Aviation is the answer to man's highest aspiration: upward promotion, minus hard work and perspiration. And, I may add in all candor, the higher you go, the less you perspire. The man at the blast furnace, for ex-

ample, is warm and wet all the time; but the president of the steel company is so cool, especially to his employees, that a glass of water placed beside him only for a moment would instantly be congealed into solid ice. In aviation it is the same: the higher you go, the colder you get.

"Who went higher than any other man in America? History answers in thunderous tones, 'Lieut. Macready!' In an airplane he rose to 37,579 feet and five eighths of an inch. In the Army Air Service he rose to the rank of Lieutenant. Then he got out. There were so many non-flying senior officers stuck solidly on the promotion list above him that he couldn't rise any higher. And now what is he doing? Is he still defending us? He is not. Inured to the cold of high altitudes by one interview with the General Staff, he is now able to sell iceless refrigerators, which are used in General Staff Headquarters as heaters.

"And at the Sesquicentennial in Philadelphia, what are they doing?" (Someone said "sleeping," and was thrown out.) "They are celebrating the discovery of aviation by Congress in 1926. Practically everyone in the country had heard of it before, some as far back as 1903, when the Wright brothers made their first flights at Kitty Hawk.

"Bill Mitchell, shortly after the war, went out and sunk a battleship with airplane bombs dropped from obsolete land ships. And the doughty Staff only said, 'The battleship wasn't feeling well that day!' Then they went back to Washington and got measured for new sets of spurs all around.

"But Congress has at last discovered aviation, and is beginning to wonder what it's all about. They have heard of the Navy flying boat NC4 crossing the Atlantic in 1919, making the third famous crossing in American History, the others being Washington crossing the Delaware and Eliza crossing the ice. Two Englishmen also crossed the Atlantic, though we don't mention that quite so often as the other."

(Tumultuous applause.)

"They have learned how the Army Air Service flew around the world, and how the Navy steamed 80.000 miles to see that the Army went. It took them nearly six months to get around and two newspaper men just did it in 28 days, proving that a newspaper man can travel three times as fast as an Army officer no matter what he's in. That's because the Army equips all its planes with air-brakes so that senior officers can fly them, and not go fast enough to delete themselves from the seniority list."

(Hearty shouts from the local reporter.)

"Congress has learned that Byrd and Amundsen flew over the North Pole. But no one has learned why they flew over it.

"At first, aeronautical development was slow. Then in the war we learned a lot of things fast—ask any soldier (Continued on page 150)

## IMPORTANCE of AIR INSURANCE

T this moment, when our minds are filled and thrilled with the Polar triumphs of aircraft, no argument is necessary to carry conviction that air travel and transportation is destined

speedily to become a factor of the utmost importance. With planes already carrying the mail of various routes during every hour of the twenty-four, with passenger travel already a matter of course in several European countries, and a subject of early promise in America, and with a recognition of the adaptability of air freight for goods of concentrated value, it is, perhaps, astonishing that our skies are not already filled with these man-made birds on their various errands.

Certainly, in considering the important part played by aircraft in the War, it seemed inevitable that it would leap to the front in commerce, travel, sport and even industry, as soon as peace was restored. That it has been somewhat tardy is due primarily to the lack of facilities for adequate insurance protection.

The American is naturally insurance-minded. While sufficiently adventurous as to personal risk, he has accustomed himself to the payment of premiums for financial security in regard to every class of hazard. Almost universally he carries life insurance, fire insurance, accident insurance and protection against so many other kinds of contingency, that the payment of premiums is a substantial item in his expenditures, with the result that his mind

is largely freed from apprehension concerning the possibility of loss.

Unquestionably this is one of the explanations of American prosperity. The tremendous flow of our business enterprise, exceeding by many times the total money volume, is made possible by the high development of the credit system, and that in turn is directly dependent upon insurance. Individuals and business concerns alike expect to make a showing of their insurance when asking for credit. Were they not able to do so, credits would be sharply curtailed or altogether refused; they would then be compelled to carry large reserves in bank balances or in the form of those liquid securities which generally pay a low rate of interest. With such idle or semiidle funds serving as a drag on business, enterprise would be hampered, production reduced and wages, purchasing power and the general level of comfort made visibly lower than at present. If, then, insurance has such a

## By Charles H. Holland

President

Independence Indemnity Company
Independence Fire Insurance Company

stimulating effect upon other branches of business it is reasonable to assume that it can do so with aviation.

AUGUST. 1926

It may be contended that aviation insurance is not an entirely

new thing, but that it arose quite actively in this country in 1919, when eight or nine companies issued coverage. The trouble was that the former aviation insurance soon developed unexpected difficulties, and the companies, quickly finding it unprofitable, withdrew from the field with but one or two exceptions, and even these continued only on greatly reduced lines. The present plan is that of revival on a new and greatly improved basis of what we believe to be sound underwriting.

Conditions immediately following the War were rather chaotic. Hundreds of war planes were without the employment for which they had been produced, and many hastily trained flyers were desirous of finding some way to capitalize their training. Consequently planes that were adapted to conflict but not to commerce were purchased at low prices and given such random employment as was found possible. Eight or nine insurance companies scented in this situation a new field for insurance and assumed a considerable volume of liability.

The companies soon found the experience to be too costly to continue and withdrew as speedily as possible, with the exception of one or two, in which the coverage was cut down to very limited lines.

For many months the Independence Companies have been studying the question of insuring aviation, believing that its hazards were of a genuinely insurable kind if there were available a sufficient body of experience for sound underwriting. The Independence Companies are now prepared to include seven coverages on one These companies. with their full equipment, in both the casualty and fire fields, will combine facilities for complete coverage never before made available in a single transaction. Not only will this mean a great increase in convenience, it also will make it possible to quote lower premium rates than where the different kinds of liability are assumed on separate contracts.

Independence a gents throughout the country will now be able to provide, at a single premium, protection of all the following kinds: Fire, Lightning and Transportation; Accidental Damage: Theft, Robbery and (Concluded on page 159)



Charles H. Holland



## THE ENTIRE FLEET ON GOODYEARS

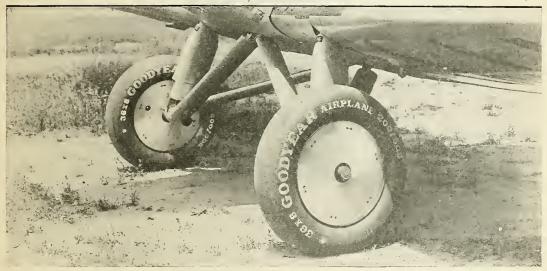


Photo shows 36 x 8 Goodyear Airplane Tires on one of the fifty new U.S. Mail Planes constructed by The Douglas Company, Santa Monica, Cal.

WHEN The Douglas Company received an order for fifty new air mail planes, they went right to work. No delay, no hesitancy—for years of patient research and careful engineering had prepared them for this largest non-military order.

One of the first things they did was to call on Goodyear for tires. And week by week, as Douglas sends new ships to the line, you'll find them on Goodyear Tires!

For The Douglas Company was as well-posted on tire equipment as on aircraft engineering and production. They had used Goodyears on the round-the-world cruisers; knew that Goodyear Airplane Tires help to keep schedule, and give long, trouble-free service.

If you pilot airplanes, or build them, you ought to know about Goodyear Tires—how they match the finest engineering and workmanship and assist performance.

Aeronautic Department

THE GOODYEAR TIRE & RUBBER COMPANY, INC., AKRON, OHIO



## REDUCE OUR AIR MAIL RATES

F the air mail postage rates were cut, both the Government and the contractors would derive more revenue than they do now.

In Air Mail Service, as in other lines of business, there is a certain minimum volume of business necessary to insure low average costs, high efficiency and good service. Present rates are so high that the air mail is not getting that necessary minimum volume of business, and thus a vicious circle of higher average costs, greater inefficiency, and consequently smaller volume of business is created.

Unless air mail trips are frequent, there is little advantage in sending many letters by air mail. Frequency of trips depends on volume of business, which in turn depends on the rates charged.

For example, the Air Mail Service at present gets practically no revenue from postcards (which are ideally suited for air mail purposes), simply because no

special air mail rate is made for postcards. It costs 24 cents to send a postcard by air mail across the United States. One hundred postcards weigh less than a pound. The transcontinental air mail probably carries less than a pound of postcards a day.

If a flat rate of 4 cents per air mail card, for any distance, were granted, this country would soon be using over one thousand million air mail cards a year both for business and social correspondence, thus bringing in a revenue of \$40,000,000 a year, where none now exists. That is only at the rate of 9 cards per person—less than one card a month,

This Government grants huge postal subsidies to publishers, farmers and others with powerful influence or restless votes. Rural free delivery costs over \$30,000,000 a year more than it earns. The Federal Government spends vast amounts on roads, rivers and harbors, public buildings, etc.

Why then should the Government be so unnecessarily cautious about lowering air mail postage rates, when the service can, in time, be made amply self-supporting at lower rates, which must necessarily precede the increased volume of business necessary to efficiency? Especially since the increased equipment and additional trained men would greatly strengthen our national defense without alarming other nations?

No nation could take exception to our development of our air mail service, and none could afford to rival ours.

With the rapid growth of branch air mail lines this year, the present three-zone system of charging postage has become so complicated that no one but a Philadelphia lawyer or the Chief of the Air Mail Service can tell how much postage to put on an air mail letter to a given city.

This country can be crossed by airplane between dawn and dusk of the same day; why make three zones out of

it? Are not two enough?

Omaha is about midway between New York and San Francisco; it is just about due north of the mouth of the Rio Grande. Why not make that the dividing line between the two zones? Chicago is not a logical place to

## By Harry Kirkwood



divide the zones, because it is in the center of air mail lines radiating to Minneapolis, Detroit, Kansas City, St. Louis and Louisville as well as New York, Omaha and points west. Why charge a two-zone rate on a letter from Milwaukee to Detroit, or Dayton to Des Moines?

Another source of inefficiency in the Air Mail Service is the fact that Congress made the unit of weight for postal charges one ounce instead of one-half ounce, it apparently never occurring to anyone that for the air mail a unit of weight might be required different from that for ordinary slow mail. The absurdity of this is readily seen when you learn that ordinary slow-mail letters, on ordinary paper, without any attempt to economize in weight, average forty to the pound; they weigh much less than half an ounce each!

Spacing of air mail boxes on city streets is another example of how efficiency depends on the volume of busi-

ness done—the more air mail, the more numerous the air mail boxes, and the more convenient the air mail boxes are, the sooner will the general public become accustomed to using the Air Mail Service, which badly needs this form of advertising.

We spent hundreds of millions, wisely, on the Panama Canal. Hundreds of millions spent on our Air Mail Service would give even more valuable results in speeding up our commerce and strengthening the defense of our coasts.

Of aircraft Rudyard Kipling wrote, "We are at the opening verse of the opening page of the chapter of endless possibilities." One of these possibilities is the possibility that Congress may display a little ordinary business intelligence in regard to air mail rates, even if it does not exhibit a patriotic spirit worthy of the devotion of the men that fly the mails.

Major General Bullard, president of the National Security League, writes in July Aero Digest: "War is a hateful thing . . . but it regenerates men made selfish, grasping and individualist by peace."

Is it then too much to expect concerted, energetic, patriotic action on constructive peace-time work such as the extension of our air mail lines? Must we wait for a war? And then waste another six hundred million dollars as we did last time?

T4 has been

It has been well said that the Wrights, at Kitty Hawk, wrote the first line of Kipling's "opening verse." Let's write more lines—Air Mail Lines—for the first line of our defense!

In a hearing last year before the Congressional subcommittee on postal rates, Arthur J. Baldwin, counsel for the National Publishers Association, reported that minute "publications," individually addressed, are being mailed at a cost of one and one-half cent per hundred copies, the weight of a hundred copies being only one pound.

If sent by air mail the postage on these, because of the minimum rate, would be *eight dollars* per pound per zone, over a thousand times as much as by railroad, figuring an average distance of two zones.

(Concluded on page 156)

## Goodrich Announces

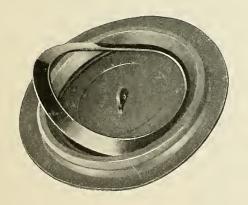
two important improvements in rubber accessories that will be keenly appreciated by the air-craft industry.

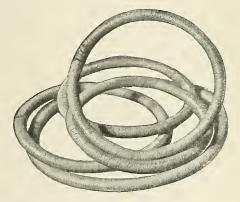
## 1 A Perfected Hand-Hold Cover

Absolutely water-tight

Cannot be pushed or knocked out by the force of water

Readily removed to permit quick inspection of the interior of pontoon without touching screws or lock washers.





## 2 A Ring-Type Shock Absorber Cord

If in flying or landing one section of the ordinary old type landing cord gives way the whole length becomes unwound. The new Goodrich Ringtype avoids this. Several rings are used in place of a straight length of cord and if one ring breaks the remaining rings still function, preventing possible damage to landing gear and increasing safety. Damaged ring is easily replaced—an economy feature.

The name Goodrich on rubber aeronautical equipment is your protection and a pledge of utmost reliability.

THE B. F. GOODRICH RUBBER COMPANY Established 1870 Akron, Ohio

## AIRPLANE TIRES

and Rubber Aeronautical Accessories

Radiator Hose Shock Absorber Cord Gasoline Hose Hand-hole Covers for Pontoons Leak-proof tank covers
Airplane Tires
Rubber Covering for Wood or
Metal Pontoons

Gammeter Airship and Balloon Valves

Laced-on-type Windshield for airplane tires

رنزاا

got back to the 'drome, there was

Tubby on the tarmac. You

## THE YARNS OF "HELL'S BELLS" O'NEIL

How Tubby Slocum Broke His Leg

O'Neil, "is more powby James Warner Bellah

erful than dynamite. Call him by James W what you like, but, always remember that he's got his tongue in his cheek and his thumb half-way to his nose—and never light three on a match.

THE flying man's god,"

says "Hell's Bells"

"Tubby Slocum was seventeen when he joined up. He had a hard time getting in on account of his lines which were more or less on the order of a bloated blimp—but a Turkish bath steamed his blubber off enough for him to pass and in he came. At his training 'drome they called him Crashing Tubby Slocum. If there was a forced landing to be made, he made it on a hangar roof, or a greenhouse or in a lake. He always cracked his 'buses to splinters when he cracked 'em at all, and he never even got bruised. There was only one tree near that 'drome and he pancaked into it three times in Jennies. Couldn't get by it, it seemed. They almost fired him out altogether for mounting up the war debt. But he stuck it somehow and got through his training days without even ripping his pants.

"Everybody shook his hand and told him to save a place in hell for them, because the way he had hard luck looked like he'd get the first wooden kimono in the crowd.

"Well, the first thing he done at the war was to smack himself plumb into a chimney one evening in a fog. He was lost, 'way behind our own lines. The chimney shears off his port wings as easy as cutting cake, and the Camel ricochets like a drunken mule driver into a nearby treetop and lands as softly as you please. Whereupon Tubby climbs out, wipes his nose and says 'Hell!'

"Was little Tubby hurt? You can just bet he wasn't.

"About three weeks later, I was flying with him on early morning escort. We'd seen a couple of Huns and got ourselves shot at, but nothing serious came of it. About ten minutes later, Tubby starts down. I stand by him but he waves 'No good' and keeps going down. It looks like he's got a bullet in his tank and the gas is gone. We were about twenty or thirty miles in, and God knows where our bombers had got to, and we weren't worrying. Down goes Tubby and the last I see of him, he's picked his field and landed. I felt pretty bad about it so I circled around a bit. He climbed out of his 'bus and waved good-bye to me. I hated to let him go that way, but that's what they paid him for, so I waves him 'pip pip' and beat it before an 'archie' party opened up on me. When I

arner Bellah could've knocked me down with a blackjack. He'd stood around waiting to be taken prisoner, and when no Jerries came out for him, he fiddles a bit with his motor, gives the prop a flip and she starts again. So he hops in and comes home

"The next thing that happens to him is that he comes in to the 'drome out of gas and cross-wind, making pretty nearly a hundred and twenty-five by the time he gets close to the floor. He can't sit her down, so he hops some tree stumps that used to be a forest, goes into the next county, skidding to the left, and smacks into the far lip of a shell-hole. The left skid tears his motor off sideways, away from him. All four longerons break and Tubby, still strapped to his seat, takes a flying loop out of the wreck and lands in the next shell-hole up to his ears in mud. Hurt? Not Tubby.

"Then there was the time the Huns came over on a night Gotha raid to get the hospital that was near us. They drop more eggs than an orphan asylum has on Easter morning. It looks like the end of the world to me. We all bolted for our funk holes to wait 'till the reception was over and most of us slept in tin hats. But not Tubby. He was drunk and asleep in his hut, and a sixteen-pound bomb smashed through the roof and the floor and covered him with wood splinters. Hurt? Hell, no! It was a dud

"Well, one thing and another, and never a scratch on Tubby. If his guns jammed in a fight, all the Huns' guns would jam too. If he got a burst of twenty in his control wires, one strand would hold out until he landed. I remember once—you may recall it—they still talk about it

when the bottles are full.

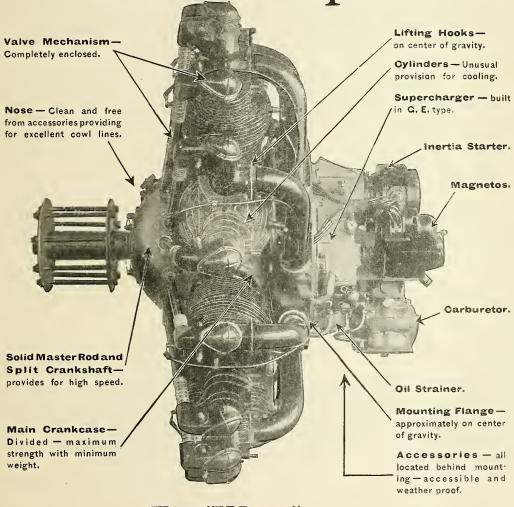
He'd lost his left wheel taking off from a 'drome up near the Ypres-Menin Road -smashed it ballywest on a horse carcass, or a stump or something. He knew it was gone, but he had a job to do, so he did it. They got him in the motor and his prop froze at about sixteen thousand. He dove out of the fight and flopped down to let 'em think he was done in. Got clean away and tried to make the 'drome, but he'd lost so much height he had to land near a battery of heavies. There wasn't much room and there wasn't anything to wedge his wings between, so he side-slipped and tried to pancake. broken wheel caught in something and pirouetted him around about six times, and he landed smack on the ammunition dump. The gun-

(Continued on page 158)

Did Trenos

"All four longerous break and Tubby, still strapped to his seat, takes a flying loop out of the wreck and lands in the next shell-hole up to his ears in mud. Hurt? Not Tubby."

## Exclusive Reasons for Leadership



The "Wasp"

## PRATT & WHITNEY AIRCRAFT CO. HARTFORD CONNECTICUT

LANDING FACILITIES

MUNICIPAL FIELD AND CONNECTICUT RIVER



ON AIRWAYS MAPS

### 108

## NEWS OF THE N.A.A.

THIS is a call to those whose interest in aviation is such that they honestly want to see it prosper in its commercial activities and ranking at the head of our national defense system, where it rightfully belongs.

It is an urge to the members of

the National Aeronautic Association to send delegates to the Convention to be held in Philadelphia September 7, 8 and 9 to help in the formulation of a program which will transfer the record of the organization from the funny pages to the news columns of our daily press.

It is a call to the pilots who served in our recent unpleasantness with Germany et al, a call to the American Legion and to members of the independent aero clubs and aviation societies of which there are hundreds in existence not affiliated with the National Aeronautic Association to come to Philadelphia and make a really national organization out of that which now is merely called the National Aeronautic Association.

The convention held in New York last October did absolutely nothing for the cause of aeronautics, and exactly the same thing has been accomplished for the cause during the past two years by the Association under its present leadership.

This situation is tragic at a time when the courageous men in the United States Air Services need every assistance that can possibly be rendered in Washington in order that the organized effort of those who for purely personal gain have endeavored to administer a quietus to the Air Service by means of national legislation may be successfully combatted.

The influence upon the members of the Senate and the House of a civilian organization, if we had one which was truly representative of the population and honestly interested in American aviation, would be paramount. Such an organization's influence would overcome the prejudiced, unfair and unreliable evidence foisted upon Congress by those of the Army and Navy who realize that as soon as general knowledge of the facts regarding the place the air force should have in our national defense inevitably must mean "this way out" for them.

The National Aeronautic Association should have been ready, without asking, to furnish the preponderance of important testimony at all investigations and should have had as its leader an executive actuated by those patriotic, unselfish motives which would have made his words impressive.

The desire, honest and earnest, of the members of the Senate and House to get authentic information of a sort competent to guide them in the formulation of intelligent legislation to help commercial flying in America, and to secure evidence to offset the asinine claims made by the bureaucrats of the Army and Navy as to the value of aircraft, always has been evident.

Their failure to get it has been due principally to the number of factions in and about the Army and Navy, each with its own selfish end to serve, factions which have been unanimous in one thing only, to stifle and hold back aeronautics.

The present membership of the National Aeronautic

We Need a Reborn National Aeronautic Association

## By Frank A. Tichenor

Association is about 5,000, of whom approximately 2,000 are members of one chapter, and 20 are Junior members. The National Geographic Association has over 112,000 members in New York State. Surely the national defense and economic welfare of the United

States is as important as its geographical education.

The National Aeronautic Association should have at least one million members and twice as many Juniors. If in the five years of its existence, its leaders had devoted the same amount of time and energy to securing Junior members that they have devoted to playing petty politics among themselves, if they had taken into the Junior organization all the right sort of boys and girls of say sixteen years that they could get these youngsters would be senior members now, and as voters would be able to put over any legislation necessary to protect and encourage the rapid expansion of the industry.

With the proper leader and a worth-while program there would be no occasion for the independent clubs which now, for perfectly good reasons, ignore the National Aeronautic Association, and when this leader and program are secured these independent clubs will soon become associated with it.

If aviation is to come into its own in the United States it is necessary that there should be behind it a really, big, well-organized civilian organization. This must have as its officers those not soliciting political appointments or social prestige for favorites, but men who are willing to fight its battles without regard to the position they hold or may hope to obtain. There are such men. They must be found, and if not found by the National Aeronautic Association, a new organization will find them, and then all that will be left for the National Aeronautic Association will be the last sad rites and interment at 2 p. m. on Friday, the 13th, send no flowers.

We need a re-born National Aeronautic Association. Fresh blood, active brains and the elimination of all flunky-ism and favoritism for those who wear gold lace on the part of its Washington representatives is needed.

In searching for a man to fill the presidency, it always in the past has been the policy to try to secure some one-who could pay the organization's bills and as a result organized aviation has become a matter of "How deep runs your pocket?" rather than of "How high runs your desire to spread the propaganda that is essential to success?"

Why not select a president about whom the air-minded of this country can rally—really rally? Don't let him serve-without pay—unpaid services are rarely valuable. Experience has proved this.

Philadelphia, this year, is celebrating its 150th anniversary as the Mother City of the Declaration of American Independence. The National Aeronautic Convention is about to be held there. It is to be hoped that the good old impulse left behind it germs which will penetrate the delegates to the National Aeronautic Association meeting and give them, too, the holy spirit of accomplishment in the name and for the good of the people of the United States by the grace of God created free and independent. There were no laggards at the ringing of Liberty Bell, in 1776.

## FOR SALE

Special custom-built biplane

## FLYING BOAT

with mahogany hull

## 420 h.p. Special Packard Engine

Perfect condition; only 40 hours flying time. Carries pilot, 5 passengers and 300 lbs. of baggage, or useful freight load of 2000 lbs. Ready for flight and immediate delivery. Owner, millionaire sportsman, just purchased 10 passenger 3-engine transport.

Address all inquiries to:

Lieutenant G. R. POND Continental Motors Corporation Detroit, Michigan

## THE BELLEVUE-STRATFORD

Headquarters of the

## National Aeronautic Association

September 4 to 11, 1926

Suggests early reservations, and will gladly arrange accommodations for

Convention Delegates and Visitors

to the

## NATIONAL AIR RACES

for enroute visits to its affiliated hotels

THE WALDORF-ASTORIA - NEW YORK THE WILLARD - - -WASHINGTON THE WINDSOR MONTREAL



Air Station of the P. R. T. Passenger & Air Mail Service, Washington, D. C., showing start of Hangar Construction in the Distance.

William E. Arthur & Co., Inc.



Aeronautic Engineers and Builders

103 Park Avenue New York City

Designers and Builders of P. R. T. Hangars and Air Station, Washington, D. C.

## NATIONAL AIRCRAFT SHOW

Beginning August 10th, 1926
SESQUI-CENTENNIAL
INTERNATIONAL EXPOSITION
PHILADEIPHIA

In the Transportation Building on the Exposition Grounds sufficient space has been set aside to accommodate the greatest display of aircraft, accessories and supplies yet attempted in the United States.

ARE YOU INTERESTED? Do you desire to help make this an exhibition worthy of the American aircraft industry and one that will contribute immensely to the development of American aviation? Do you realize the value of having your products exhibited at a show which is bound to be a striking feature of the great international exposition, a patriotic celebration that is daily attracting visitors from every community in the United States? If you are interested, note the following:

This National exhibit is being arranged with the sanction and most active co-operation of the Aeronautical Chamber of Commerce of America, Inc.

Space will be allocated according to priority of applications. In reply please state the number of square feet of space you will require, the class or type of equipment or materials you intend exhibiting, with a complete description of the same.

All exhibits must be delivered by the exhibitor, and placed in the space reserved, not later than August 10th, 1926. It is agreed that they will be permitted to remain until September 15th, 1926, at least. You may start shipping now.

Your application should be filed immediately by mail or telegram, addressed to Howard F. Wehrle, Director of Aeronautics. Sesquicentennial, Room 819 Atlantic Building, Philadelphia, Pa.

SESQUICENTENNIAL EXHIBITION ASSOCIATION

Department of Aeronautics
HOWARD F. WEHRLE
Director

# AIR RACES AIR RACES PHILADELPHIA Sept. 4th to 11th, 1926 ENTER NOW

NINETEEN CONTESTS

Fourteen for Civilians

\$30,000 CASH PRIZES

Valuable Trophies

## DAY and NIGHT AIR CIRCUS

Whether you enter the contests or bring your equipment to the races as a visitor, you will have unexcelled opportunities to demonstrate before vast crowds.

This is the great annual reunion of flying men. Meet your friends at the National Air Races. Learn what others are doing in the air.

Your audience will include all those actively interested in American aviation, official representatives of the National and State governments, foreign missions and citizens from every community in the United States who are visiting the

## SESQUI-CENTENNIAL

If you have not received the Rules Booklet, address

**NATIONAL AIR RACES 1926** 

HOWARD F. WEHRLE

Managing Director

ROOM 819, ATLANTIC BUILDING PHILADELPHIA, PA.



OT speed, not sensational performance, but the steady grind of daily operation, the hourly pound, pound, pound of motors operating on

schedule between terminals, the logbook that reads in hundreds of hours and thousands of miles determines the type of commercial airplane today.

Just as the race track is the laboratory of the automobile industry so are the scheduled airplanes criterions upon which to evaluate true worth of flying equipment.

Ryan airlines have no hundred thousand feet of factory floor space to indicate their rather rapid progress; they have an idea and that idea is being developed and perfected in a laboratory 126 miles long with a variety of atmospheric conditions. The floor space of the factory is in the process, it will materialize very quickly.

Two years ago, so-called experts predicted that an airline between Los Angeles and San Diego could not succeed. There was not enough travel and Hisso Standards and OX5 Jennies would not make the grade.

On March 1, 1925, the Los Angeles-San Diego Airline was inaugurated and conducted on daily schedule as an experiment. The equipment consisted of Hisso cabin Standards and Jennies. Behind the project were three men with an idea. The experiment was a success.

Conducting the two terminals of the airline as local

flying companies and keeping enough spare planes on hand to keep the daily auline in operation. sufficient capital was amassed to experiment in the manufacture of new planes. The needs of this particular airline and the adjoining flying fields were taken into consideration and plans were drawn up for a practical small commercial plane of rather unusual economy. The first crude drawings pictured an externally B. F. Mahoney

braced monoplane with the wing flush with the top longerons and doors in the side like an automobile. The results which followed these first plans are well-

known to the readers of Aero Digest.

Ryan M-1 number 1 was immediately delivered to Pacific Air Transport to be used as a survey plane routing the air mail airway between Los Angeles and Seattle. This plane was equipped with a Wright "Whirlwind" motor and it created a sensation at every airport visited. Flying records were broken between air mail stops and the plane with the same motor was in the air nearly 250 hours during the first sixty days.

The second Ryan M-1 was equipped with an OX-5, then a Hispano-Suiza and Super-Rhone during which time extensive performance tests were conducted. After the figures on the performance were established a Wright "Whirlwind" motor was put in and the plane distinguished itself when pilot Lee Schoenhair made a 1,050 mile non-stop flight from Portland to Los Angeles in eight hours and fifty minutes.

The third plane carried the first pictures of the flight of the *Norge* over the pole to the Pacific Coast cities.

When the news was broadcast over the nation that the evangelist Aimee McPherson had been found in Douglas, Arizona, a Ryan monoplane was the first airplane to ar-

rive at the scene from the outside world. Ryan, flying the return trip at night over the desert and through mountain passes, negoti-ated the 450-mile trip back to Los Angeles with the first pictures, scoring a complete scoop. A R y a n monoplane owned by Pacific Air Transport carried the pictures on to San Francisco and arrived hours ahead.

Unusual among the accomplishments (Concluded on page 156)



The 13,013th passenger on the Ryan Airlines, A. Hegle, left his air-cooled 1902 auto to make an air trip with Pilot Mahoney.





T. C. Ryan,
President of
Ryan Airlines.

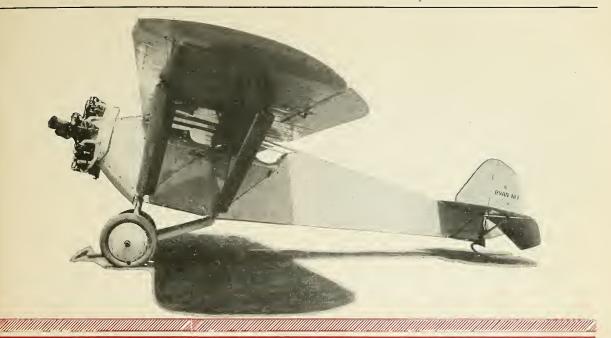
## In the Ryan M-1 Monoplane Nothing takes the place of leather

The President of Ryan Airlines, Mr. T. C. Ryan and W. H. Bowlus, Consulting Engineer, drew up plans two years ago for a commercial and pleasure monoplane which is known now from coast to coast as the Ryan M-1.

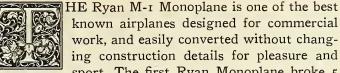
It meets the rigid requirements of air mail contractors for speed, carrying capacity and durability. It cruises at a speed of 115 miles per hour with a 600-pound payload.

Naturally the designers of the Ryan M-I specify Real Leather.

## Nothing takes the place of



The Ryan M-1 Monoplane.



ing construction details for pleasure and sport. The first Ryan Monoplane broke 5

records for cruising speed with full load between San Diego and Seattle and return.

It is now used as standard equipment by the Pacific Air Transport, operators of the biggest contract air mail route—Seattle, Washington to Los Angeles, California.

Where a combination of beauty, comfort and durability is required, such as on the cockpit cowling, the specifications call for REAL LEATHER.

AMERICAN LEATHER PRODUCERS, Inc. New York City, N. Y. 1 Madison Avenue

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## "QUAKER STATE OIL used exclusively"

Quaker State Oil used in the Ryan M-1 Monoplane in its eight hour and fifty minute non-stop flight from Portland to Los Angeles.

Quaker State Oil used exclusively in all of the Ryan Los Angeles-San Diego passsenger ships.

Quaker State Oil used exclusively in the Ryan M-1 Monoplane mail ships.

Quaker State Oil used exclusively in all of the phenomenal test flights made by the M-1 Monoplane.

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Make Commercial Planes Light, Strong

Referring to the rebuilt job shown above the Ryan Airlines, Inc., write, "The fuselage is an almost perfect streamline shape. The performance of the plane is increased both in speed and in climb. The large passenger cabin is made almost entirely of Haskelite, as are the seats, doors, bulkheads, etc. Haskelite helped to make this joh very light—though very strong and durable."

Haskelite was also used in the Ryan plane which recently carried a useful load 320 pounds greater than its own weight on a 960 mile flight from Vancouver to Los Angeles in 8 hours, 50 minutes.

Haskelite strength, light weight, and weather-resisting ability have made it standard on commercial planes as well as on those of the Navy, Army, Postoffice and all other government departments that use aircraft. Over 85% of the plywood used in the aircraft industry today is Haskelite. Write for complete list of applications.

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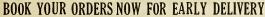
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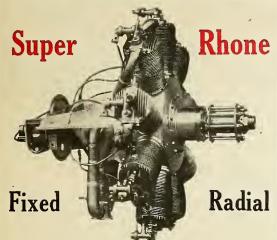
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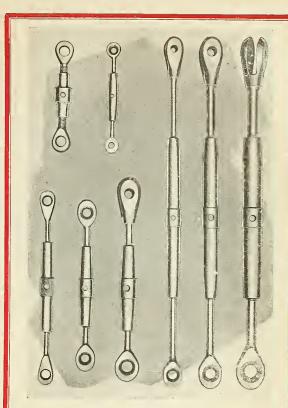
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## A cheering sign of aircraft progress ~



## the Ryan-M 1

AVIATION in the West is well on its way forward—as is demonstrated in the field of aircraft manufacture by the highly successful Ryan M1.

Again—for the benefit of fliers on cross-country flights, the Standard Oil Company of California has marked the roofs of its sub-stations in 110 towns between San Diego and Seattle with the name of the respective town. These names can be read easily, all of them from an elevation of 3,000 feet, most of them from 5,000 feet and better. In addition to the name an arrow has been placed nearby pointing to the true north.

With the manufacturers of the Ryan M1 this Company is pleased to share in aviation's progress.

All Ryan M1s are delivered with a full tank of Red Crown Aviation Gasoline—aviation's power fuel in the West.

STANDARD OIL COMPANY OF CALIFORNIA



"We have been using Boyce Moto Meters on all of our equipment for over three years and find them to be the best obtainable"

> T. C. Ryan RYAN AIRLINES



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contribute their share to the splendid performance of the Ryan Monoplane. Hamilton propellers are standard equipment and materially improve take-off, climb and eruising speed of this plane. We can do the same for your ship. Hamilton service for the Ryan Monoplane is complete. Propellers in stock for immediate delivery.

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Continues a Service of Security of Security Jews Continues of Security Jews of Heaviston OKLAHOMA ARIZONA OF AVIATION SHORT SEEMS FLIGHTS CROSS COUNTRY! OREGON NEVADA The Aeronautical Digest Publishing Corp. 220 West 42nd Street. Rew York City. ILLINOIS INDIANA Bentlamen:-In March shem we first inserted our savertisement in the ARRO DIGEST, I had some doubts as to the savies—shilty of savertisen, our school of existing other them in a local way. Since March we have received three hundred and teamly letters of inquiry coming from every state in the menty letters of inquiry coming from every state in the menty letters of inquiry coming from every state in the menty letters of inquiry coming from every state in the same and South and Contral America. In replying to these inquiries we make it a practice to ask the prospect how our school was brot to hie ettention. Almost invariably the snewer is "AESG DIGEST". And the student end is only one phase - other lines of our business advertised in your columns have brot, proportionately, the essem number of inquiries. IDAHO FLORIDA DELAWARE IOWA VERMONT KANSAS OHIO TEXAS Yours very truly. MAINE UTAH SOUTH DAKOTA TENNESSEE MISSOURI VIRGINIA WYOMING The Aero Corporation of California MONTANA finds that it does. They receive re-NEBRASKA LOUISIANA plies from every state in the Union and many foreign countries. Read their NEW MEXICO KENTUCKY voluntary testimonial enclosing letters from Cuba, Canada and Hawaii. NEW JERSEY MARYLAND NEW YORK MICHIGAN AERO DIGEST gets the best results for the largest number of advertisers in the air-JAPAN CANADA craft field because it is

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## And in the South A Curtiss Lark Finished with Duco

UNDER hot suns, in a salt-sea atmosphere, the passenger-mail plane of Florida Airways, Ltd., makes its flights between Atlanta, Miami, Fort Myers and Tampa on regular schedule. It is completely finished in Duco, as is that other Curtiss Lark which carries supplies in to the gold fields in Red Lake, Ontario.

Duco is one of the many du Pont products scientifically adapted to aircraft use. There is a du Pont product for every part of an airplane—wing dope, paint, varnish and Duco.

The Curtiss "Lark" is powered with a 200 H.P. Wright-Whirlwind motor.

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The advice of the du Pont Industrial Finishing Service is freely offered for help on your own particular needs. Write us about your finishing problems. Address: E. I. du Pont de Nemours & Co., Inc., Chemical Products Division, Parlin, N. J., Detroit, Mich., Chicago, Ill., San Francisco, Cal., Everett, Mass., or Flint Paint & Varnish Limited, Toronto, Canada.

(OU PONT)

Say you saw it in AERO DIGEST

## WESTERN NEWS

## DE-BUNKING AVIATION

By Dr. FORD A. CARPENTER

Manager, Department Meteorology and Aero nautics, Los Angeles Chamber of Commerce.

A STEP in the right direction towards taking the "bunk" out of aviation has been accomplished in the United States and especially in Southern California during the past few months in the splendid performance of the recent widespread extension of the air mail. One of the most successful of the Pacific air mail contractors is the Western Air Express. This is a semi-public venture financed with private capital by Los Angeles business men who have high vision of the future of air transportation and large understanding of the difficulties incident to pioneering in any field, especially in commercial aeronautics. Realizing this unusual combination of imagination and knowledge, the Post Office Department, and especially its local officials, have extended sincere cooperation. This public service has been given an excellent measure of support by local business men. The average mail load both eastbound and out of Los Angeles and westbound into Los Angeles has exceeded any other airline of the same length of operation over an equal distance. One of the most satis fying features is that the amount of mail carried both east as well as west shows a steady increase.

The Postmaster General, Harry S. New, has shown a continuing interest in commercial aviation most unusual in such an ancient executive department, and to him American aviation owes a lasting debt of gratitude.

At the time of the inauguration of the air mail, the writer gave special flying data from the Weather Bureau and the Chamber of Commerce department of meteorology and aeronautics for the eastward flights and later in the day flew over the air mail port of the Western Air Express in a Clover Field plane. A month later he took off and landed at this field and found it one of the most satisfactory of the seventeen landing fields in the vicinity of Los Angeles.

The following data as to the air mail port of Los Angeles will be found valuable to visiting aviators and to the public generally: Name of Field-Air Mail Airport, Los

Angeles, California.

Class-Privately owned by Western Air Express, Inc.

Location-Located seven miles from Los Angeles Post Office, east of Los Angeles and one mile southwest of Montebello: is between Northern Pacific Railroad and Santa Fé tracks; Standard Oil tank farm adjoins field on northeast corner; Simons brick plant on east border of field; high tension line on west boundary; Telegraph boulevard on south boundary,

Altitude above sea level-200 feet. Description-Size, 411 acres: east bound-



Underwood & Underwood

Maj. C. C. Moseley and pilot Drinkwater of the Western Air Express, Inc.

ary, 3,176 feet, south boundary, 4,047 feet; level; telephone and power lines on north and south boundaries; field in good condition for landing the year around.

Obstructions around and near field-High tension on west boundary, pole line on north and south boundaries

Signals and markings-Hangar in southeast corner marked "Fly Your Mail": Standard Oil tank farm in northeast corner marked "Montebello."

Accommodations-Western Air Express, Inc., hangar 60 x 140; man in charge at all times, main highways and bus lines available to city. Repair facilities available at Western Air Express machine shop and motor overhaul; oil and water available for government and commercial airplanes.

Communications-Telephone: radio to Las Vegas and Salt Lake City, Utah; paved highway; Telegraph Road; bus to city.

Metcorologica! data available at airdrome -Prevailing wind from west; nearest airdrome to center of Los Angeles, visiting ships are not to land directly toward hangar, -they should land west of hangar.

The citizens of Southern California need no urging to get the "air mail habit" for they are making increasingly regular use of this splendid service. The fact that Los Angeles is within a little over a day's distance of Chicago, and only two days from New York presents a most attractive sales-picture to the up-to-the-minute salesman and one that he will not be slow in sensing.

## AUGUST AERO DIGESTS DELIVERED BY AIR

HROUGH the courtesy of the Ryan Airlines, Inc., the August issue of Aero DIGEST will be delivered by Frank Samuels, Western representative for Aero Digest, to the airports in Southern California. A Ryan M-1 monoplane will be used for this modern method of distribution.

## A SCENIC AIR TRIP

By Frank E. Samuels

THROUGH the courtesy of the Ryan Airlines, Inc. and the invitation of I. B. Alexander, sales manager of the company, I passed as pleasant a holiday, as it ever has been my good luck to enjoy, on the regular daily trip of the Ryan Airline from Los Angeles to San Diego and return.

At exactly 10.10 on the morning of July fifth Earl W. Chubb, manager of the Los Angeles terminal, gave the signal and number 8, the four-passenger and pilot, cabin job, Ryan M-1, took off from the airport on Mesa Drive, piloted by Wentworth Goss, one of Ryan's best pilots. With me in the front seat was J. B. Alexander and the two rear seats of the cabin were occupied by a couple starting on their honeymoon.

Flying low but gaining altitude over the city, its well laid-out streets and boulevards. its tall buildings and pretty homes with their green lawns and bright colored gardens passed our view in panoramic succession. Headed west and south we were soon over or close to a number of suburban towns, dairy farms, oil wells with their derricks like toothpicks stuck in a cake, beautifully laid-out truck farms like huge checker boards, thousands of acres of citrus groves like regiments of soldiers, and with it all an ever changing color effect

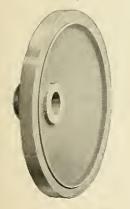
Just a little further west, about half-way between Long Beach and Naples, we reached the ocean, which we flew over for miles and miles, parallel with the beach about one-half mile off shore, passing Seal Beach, Huntington Beach, Newport Beach and Balboa. A tew miles further south came Laguna with its rocky cliffs and pretty inlets, the home of the Artist Colony. We circled above Laguna and Mr. Alexander dropped a message in a weighted cone to his wife, who was spending the week-end at one of the camps,

At San Juan Capistrano we ran into a thick fog bank. The pilot, with his usual caution, turned back for a few miles and flew around the fog, bringing us further off shore for a time. Then back over the San Juan Capistrano range of mountains with its rugged peaks and deep canyons. For quite a distance we paralleled the San Diego-Los Angeles coast route highway-a beautiful sight: the sun on the ocean on our right, the beach with its crowd of holiday campers, the mountain range on our left. We passed Oceanside, Carisbad, Cardiff the beautiful La Jola (pronounced La Hoya), and the scenic Torrey Pine Grade. Then a short circle around San Diego, the Naval Base, and down into the large, smooth landing field of the Ryan Airlines, Inc., arriving there at exactly 11.40-a flat ninety minutes from Los Angeles

On alighting from the plane we were received by Claude Ryan, who took us on a trip of inspection through the plant, where

## BOHNALITE PERMANENT MOLD CASTINGS



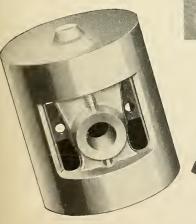


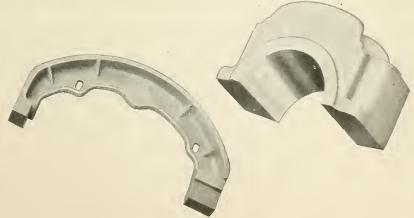
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EAST GRAND BOULEVARD, DETROIT





the M-1 monoplanes are constructed. He informed us that they are now turning out a finished ship every week. They have delivered five of the M-1 monoplanes to the Pacific Air Transport Corp., who have the contract for the Seattle-Los Angeles mail route, and their contract calls for the delivery of four more within the next thirty days. We saw these four under different stages of construction.

At exactly 4.10 we took off and bucked a strong head wind from the time we left San Diego until we reached Los Angeles, but made the trip in an hour and forty minutes, just ten minutes over the scheduled time, arriving at Los Angeles at 5.50.

### SANTA BARBARA NOTES

By EARLE OVINGTON

DR. J. BERT SAXBY, JR., has concluded his experiments dusting walnut trees and they have been a success, on the last tests a 99 percent kill being reported. He's making plans for next season to dust on quite an extensive scale.

Dwight Faulding sold his Jenny and now feels like a fish out of water. He has his eye on a Swallow.

Speaking of the Swallow, the writer has his new one. And a little beauty it is. After horseing around a Jenny the Swallow acts like a PW8—or rather, it acts like I think a PW8 might act, as I've never had the pleasure of sitting behind the joy-stick of one.

The airfield problem is still the big one



The W. F. W. Company's "Thunderbird."

in the Santa Barbara Aero Club. Our members all realize the importance of having a decent landing field but very few outside our membership appreciate the fact that commercial aviation is coming into its own—at last! Our present field is a death-trap, but it's all we have. Heaven help the first one of us whose motor stops just after taking off!

Roy Priest, in Ventura, about thirty miles from Santa Barbara, has the second Swallow in this neighborhood and is certainly having a good time with it. Both of us had difficulty, at first, making the little ship come down tails and wheels together, as it "floats" compared with a Jenny. But, once you get used to it, she flies herself.

Those of us who have ships had a fine time on the Fourth. Among other things, we dropped bombs over the town just at the edge of the beach. A passenger in one of the ships, whose bomb did not flash at the fuse when he struck it, calmly put the bomb in his pocket. Didn't want to waste it, he

explained when he came down! Guess he intended to take it home and set it off by putting it in the kitchen stove.

Some people, many of whom are aviators, are living on borrowed time anyway.

Which reminds me that I invariably reply to the question: "Ovington, why haven't you been killed in fifteen years of flying?" by the remark: "The good die young." And many a true word is spoken in jest.

## W. F. W. AIRCRAFT CORP.

THE W-F-W Aircraft Corporation recently tested officially their first specially designed, light passenger craft, the Thunderbird, at the airport of the Aero Corporation of California. The biplane is fully streamlined, which tends to develop greater speed and ease of handling.

Pilot Frye and Theodore A. Woolsey, designer of the new craft, are associated with Paul Whittier in the new company. It is expected that other planes will be under construction within six months

## MAKING THE AIR SAFE

THE Department of Meteorology and Aeronautics of the Los Angeles, California, Chamber of Commerce was organized in September, 1919, and Dr. Ford A. Carpenter was called from the United States Weather Bureau to its directorate. At the present time it is the senior commercial department of aeronautics, and it is an important part of the largest Chamber of Commerce

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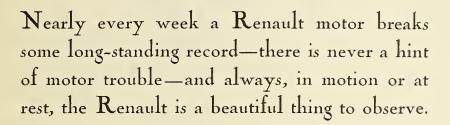
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## FOR INSTANCE—

On June 28th, Capt. Arrachart, flying in a Potez plane, broke the world's non-stop, non-refueling record—from Paris to Bassorah (Persian Gulf)—a distance of 2750 miles.

On July 10th, at Monthlery Racing Track, a 40 h.p. stock car beats 10 world's records, all classes, of which a 24 hour record, averaging 107.81 miles an hour during 2121 miles.



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in the world, that of Los Angeles having 14,000 paid members.

Specifically, the purposes of the Department are as follows:

Cooperates with the research bureaus of the United States and all other states, county and city governments

Prepares special illustrated reports on climate and health and aeronautics for publi-

Acts in conference as a member of Federal State and Municipal climatological and aeronautic commissions.

Originates reports and charts on water and power development.

Lectures on climatic and flight conditions in southern California for business and industrial organizations, and for the public generally throughout the United States

Advises orchardists on frost, fumigation and flood protection, calibrates orchard thermometers, tests rain-gauges, and altimeters for aviators

Maps air-courses for government and civilian aviators, lists and studies all aeronautic accidents, and is the only institution in the United States which has made a constructive use of these occurrences since 1919. Charts the air for flight at different flying levels; keeps complete records of landing fields; prepares exhibits for air meets and aeronautic museums, and is headquarters for air mail information.

Harmonizes in daily active cooperation with the Chamber of Commerce research. agricultural, industrial, marine, transportation, harbor safety, field service and convention bureaus and with the local All-Year-Round, community development and all service clubs of Los Angeles.

The practical work of the department consists of

Flight courses-Aviation maps, air mail routes exhibited and explained.

Air navigation instruments-Radium-dial, alcohol submerged magnetic compass with card level in any ordinary flight position; radium-dial aperoid principle (depending ou decrease of pressure with altitude above sea level) altimeter showing elevation above ground from 100 to 25,000 feet; barographs by same principle recording altitude by minutes of time; altimeter-testing apparatus consisting of Venturi-tube, water pressure airpump: thermometer test by comparison with U. S. Bureau of Standards using granulated ice and coarse salt lowering temperatures to frost protection test (24° to 34°), also 3point test (37°, 50° and 80°) for tree fumigating work. Horticultural commissioners of 7 counties in southern California demand. under penalty of law, that fumigators use only thermometers bearing seal of U. S. Burean of Standards of Department of Meteorology and Aeronautics, Los Angeles Chamber of Commerce.

## SACRAMENTO NOTES

By E. J. CARNES

DESPITE the lack of a sizable municipal airport, aviation is on the boom in Sacramento, with two privately-operated fields in addition to the small one provided by the

The Air Service Company, headed by H. G. "Andy" Andrews, have taken over the distribution of the Hess "Bluebird" for California and Hawaii, and expect to have models of the line immediately. Andrews is doing passenger-carrying and advertising work with a rebuilt Standard, and has a Jenny under construction. He has several students enrolled at various points in the Sacramento

Ingvald Fagerskog, who uses the municipal field as his base, is doing passenger work with his well-known Jenny, the "Comet," and also is building another Jenny.

The Irwin Aircraft Corporation has just opened the new Irwin Airport, four miles from the center of the city. This is one of the finest fields on the coast, having a welllevelled runway of 2,600 feet. A high tower with spot and flood lights is in operation for night flying, and a man is on duty at the hangars at all hours A gasoline service station and repair shop are maintained on the field for the convenience of visiting pilots. It is open to all flyers.

I. F. Irwin, head of the company, has just completed a model of his Meteorplane, powered with the four-cylinder air-cooled Meteormotor, and is moving his factory from the city to the field, in preparation for the production of one plane per week.

The forest fire patrol service has two DHs in daily operation from Mather Field, ten miles from the city, manned by Lieutenants Paul Andert and Ernie Smith of the reserve

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This is a specially equipped WACO

not a stock model but sold at a
stock model price.

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## THE PERFORMANCE MADE THE DEMAND

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## WITH the SERVICES

## DAVISON CHOSEN FOR ARMY AVIATION HEAD

N the appointment of F. Trubee Davison to the post of Assistant Secretary of War in charge of Army aviation, President Coolidge has made a wise choice.

During the early part of the war, Mr. Davison drove an ambulance in France; in 1916 with other Yale students, he organized the Vale aviation unit, known as Coast Patrol Unit No. 1. Later he served in the Naval Air Service as a Lieutenant. Since 1921 he has served as a member of the New York Assembly and has made a fine record there. His previous technical training and practical experience will be an asset to him in this important position.

## LIEUT. COLS. GILMORE AND LAHM PROMOTED

THE appointment of two additional Brigadier Generals in the Air Service of the United States Army on July 17, in compliance with legislation passed at the last session of Congress which authorized these additional staff officers in the Air Service, was the first official act of F. Trubee Davison in his capacity as Assistant Secretary of War.

The two officers appointed to the new posts are Lieutenant Colonel William E. Gilmore, who has been chief of the Supply Division in the office of the Chief of the Air Corps at Washington, and Lieutenant Colonel Frank P. Lahm, at present the Air Officer of the Ninth Corps Area at San Francisco, Calif. They, together with Brigadier General James E. Fechet, will be the three assistant chiefs of the Air Service, and will be directly under Major General Patrick.



Wide World Photo

F. Trubee Davison, Asst. Sec'y of War for Aviation, and Maj. Gen. Patrick.

### SERVICE FLYERS AIR AT SESQUICENTENNIAL

THE Army Air Service has three Martin Bombers, three Douglas O2's and three Curtiss P. A. airplanes stationed at Camp Anthony Wayne for the duration of the Sesquicentennial Exposition. Demonstration flights are made every week day. A captive balloon, also, is stationed on the exposition grounds which is up every day that the weather permits.

Major John C. McDonnell is in command with the following officers: Capt. A. W. Smith, Flight Surgeon: Capt. C. H. Revnolds. Detachment Commander: 1st. Lt. Alfred Lindeberg, Bombing and Utilities: 1st Lt. Eugene Batten, Transportation and Skywriting; 1st Lt. O. L. Stevens, Parachutes: 1st Lt. Cyrus Bettis, Operations Officer: 1st Lt. Edwin R. McReynolds, Engineering Officer: 2nd Lt. James S. Early, Meteorological and Balloon Officer: 2nd Lt. William L. Scott, Supply Officer; 2nd Lt. A. V. Smith, Armament Officer: 2nd Lt. John J. Williams, Adjutant; 2nd Lt. Luther S. Smith, Information and Maneuvering Officer; 2nd Lt. Willard Harris, Provost Marshall.

In addition to these there are fifty-four enlisted men, most of whom are non-commissioned officers.

### MARINE CORPS ORDERS

MARINE CORPS ORDERS

THE following Marine Corps orders have been issued as of the dates indicated in brackets:
Farrell, 1st Lt. W. G., detached Headquarters Marine Corps, to the Air Service Tactical School, Langley Field, Va. (June 26) Mitchell. Capt. R. J., detached Headquarters Marine Corps, to the Air Service Tactical School, Langley Field, Va.

Turner, Lt. Col. T. C., detached MB, Quantico, Va., to the Air Service Tactical School, Langley Field, Va. (June 26)

## NAVY AIR SERVICE ORDERS

HE following Navy Air orders have been issued as of the dates indicated in brackets:

Alvis, Lt. John D., detached Naval Air Station, Pensacola, Fla., to Airgraft Squadrons, Battle Fleet. (July 2) Anderson, Ensign Wm. D., detached Naval Air Station, Pensacola, Fla., to Aircraft Squadron, Battle Fleet. (July 3)

Anderson, Ensign Wm. D., detached Naval Air Station, Pensacola, Fla., to Aircraft Squadron, Battle Fleet.

Andrews, Ensign James R., detached Naval Training Station, Hampton Roads, Va., to duty Naval Air Station, Pensacola, Fla.

July 22

Baillio, Ensign Roland V., detached U. S. S. Henderson, to temporary duty Naval Air Station, Pensacola, Fla.

Barbey, Lt. Comdr. Daniel E., detached U. S. S. Henderson, to temporary duty Naval Air Station, Pensacola, Fla.

July 26

Barbey, Lt. Comdr. Daniel E., detached U. S. S. Cincinnati, to Naval Air Station, Pensacola, Fla.

Behner, Lt. (jg.) Herbert C., detached Naval Air Station, Pensacola, Fla.

Behner, Lt. (sp.) Herbert C., detached Naval Air Station, Pensacola, Fla.

Bekius, Lt. Robert W., detached Naval Air Station, Pensacola, Fla., to Aircraft Squadrons, Scouting Fleet.

Scotting Fleet. (July 2)
Bockius, Lt. Robert W., detached Naval Air Station, Pensacola, Fla., to Aircraft Squadrons,
Scotting Fleet.
Bogusch, Lt. Comdr. Harry R., detached aide and
flag see'y on staff. Dest. Squads, Battle Fleet,
to Naval Air Station, Pensacola, Fla. (July 2)
Boone, Lt. (j.g.) Walter F., detached Naval Air
Station, Pensacola, Fla., to Aircraft Squadrons,
Battle Fleet. (July 2)
Brandenburger, Lt. (j.g.) Harry A., detached
Naval Air Station, Pensacola, Fla., to Aircraft
Squadrons, Battle Fleet.
Bryant, Lt. Comdr. Carleton F., detached Naval
Inspector of Ordinance, Midvale Co., Nicetown,
Phila, Pa., to U. S. S. Saratoga. (July 2)
Bundy, Gun. Ralph T., detached Naval Air Station, Pensacola, Fla., to Aircraft Squadrons,
Scotting Fleet.
Butler, Capt. Henry V., detached Office Naval Operations, Navy Department, to command U. S. S.
Saratoga. (June 28)

erations, Navy Department, to command U. S. S. Saratoga.

Saratoga.

Air Station, Pensacola, Fla.; to Aircraft Squadrons, Scouting Fleet.
Cabanilias, Ensign Jose M., detached U. S. S. Oklahoma, to temporary duty Naval Air Station, Pensacola, Fla.

(June 25)

Child, Comdr. Warren G., detached Aircraft Squadrons, Battle Fleet, to Naval Air Station, Pensacola, Fla.

Coe. Ensign Charles F., detached Naval Air Station, Pensacola, Fla., to Aircraft Squadrons, Battle Fleet, to Navil Air Station, Pensacola, Fla., to Aircraft Squadrons, Gluly 3)

Cooke, Lt. (j. g.) William R., detached Naval Air Station, Pensacola, Fla., to U. S. S. Barker.

(June 30)

(Continued on page 130)



Shepherd Field, Martinsburg, W. Va. during the encampment of the 99th Aero Squad.



"A Vought will always get you there and back, in comfort and safety."

### NAVY AIR SERVICE ORDERS

NAVY AIR SERVICE ORDERS

(Covell, Lt. (f. g.) W. D., detached Naval Air Station, Pensacola, Fla., to Aircraft Squadrons, Bartle Fleet.

(rawford, Lt. (j. g.) George C., detached (1uly 3), Arizona, to Naval Air Station, Pensacola, S. S., Arizona, to Naval Air Station, Pensacola, I. (June 25), Cronin, Lt. (j. g.) C., detached Naval Air Station, Pensacola, Fla., to Aircraft Squadrons, Battle Fleet.

Pensacola, Fla., to Alterate Squar (July 3)
Fleet.
Cruise, Lt. (j.g.) Edgar A., detached Naval Air
Station, Pensacola, Fla., to Aircraft Squadrons
Scouting Fleet.
Cunningham, Lt. Robert P., detached Navy Acade
my, to Naval Air Station, Pensacola,
Fla., for

Station, Pensacola, Fla., to Alterart Squadrons, Scouting Fleet.

Gunningham, Lt. Robert P., detached Navy Academy, to Naval Air Station, Pensacola, Fla., for temporary duty.

Davis, Comdr. Henry F. D., detached Naval Air craft Factory, Navy Yard, Phila., Pa., to Bureau Engineering, Orders to 12th Naval District, revoked.

Douglas, Lt. Comdr. Archibald H., detached Naval Air Station, Pensacola, Fla., to Aircraft Squadrons, Scouting Fleet.

Duncan, Lt. Donald B., to duty Aircraft Squadrons, Battle Fleet.

Dussault, Ensign George A., detached Naval Air Station, Pensacola, Fla., to Aircraft Squadrons, Battle Fleet.

Edgar, Lt. Comdr. Camphell D., detached Naval Air Station, Pensacola, Fla.

Edgar, Lt. Comdr. Camphell D., detached Naval Air Station, Pensacola, Fla.

Ellyson, Comdr. Tendotore G., detached U. S. S. Hright to U. S. S. Lexington.

Flagg, Lt. Allen P., detached V. F. Squadron 2, Aircraft Squadrons, Battle Fleet, Unue 20 Aeronautics.

Flagg, Lt. Allen P., detached Squadron 2, Aircraft Squadrons, Battle Fleet, Unue 20 Aeronautics.

Flagg, Lt. Allen P., detached Squadron 2, Aircraft Squadrons, Battle Fleet, to Bureau of Aeronautics.

Flagg, Lt. Allen P., detached Squadron 2, Aircraft Squadrons, Battle Fleet, Unue 20 Aeronautics.

Flagg, Lt. Allen P., detached Squadron 2, Aircraft Squadrons, Battle Fleet, Unue 20 Flagg, University Squadrons, Battle Fleet, Squadrons, Battle Fleet, University Squadrons, Battle Fleet, Squa

Grow, Lt. 1), B. Deadton, Station, Pensacola, Fla., to Aircraft Squadrons, Battle Fleet.
Graf, Ensign Paul, detached Naval Air Station, Pensacola, Fla., to U. S. S. Vivginia, (July 1) Haman, Ensign Claude W., to temporary duty Naval Academy, designated student Naval Avia (June 26)

Naval Academy, designated student Naval Avia-tor. [June 26] Hamilton, Ensign William H., detached Naval Air Station, Pensacola, Fla., to Aircraft Squadrons, Battle Fleet. [July 3] Harpert, Lt. Cecil F., detached Naval Air Station, Pensacola, Fla., to Aircraft Squadrons, Battle Fleet. [July 6] Hasselman, Lt. (j.g.) George H., detached Naval

Pensacola, Fla., to Alferiat Gude Fleet. (July 6) Hasselman, Lt. (j.g.) George H., detached Naval Air Station, Pensacola, Fla., to Aircraft Squad-rons, Scouting Fleet, Horne, Lt. Kenneth F., detached U. S. S. Patoka, to Navy Yard, Boston. (July 20) Hunt, Lt. (j.g.) Linfield L., detached Naval Air Station, Pensacola, Fla., to Aircraft Squadrons. (July 3)

Hunt, Lt. (j.g.) Linfield L., detached Naval Air Station, Pensacola, Fla., to Aircraft Squadrons. Author of Squadrons. Scouting Fleet.

Hurd, Ensign Laurence E., detached Naval Air Station, Pensacola, Fla., to Aircraft Squadrons. Battle Fleet.

Ingersoll, Lt. (j.g.) Stuart H., detached Naval Air Station, Pensacola, Fla., to Aircraft Squadrons. Battle Fleet, July 2)

Jeter, Lt. Thomas P., detached Bureau of Aeronautics, to Army Air Service Field, Dayton. (June 30)

Judson, Lt. (j.g.) Charles H., detached U. S. S. New Mexico, to temporary duty Naval Air Station, Pensacola, Fla.

Jeter, Lt. Chomas P., detached Bureau of Aeronautics, to Army Air Service Field, Dayton. (June 30)

Judson, Lt. (j.g.) Charles H., detached U. S. S. New Mexico, to temporary duty Naval Air Station, Pensacola, Fla.

Judy 2)

Kane, Ensign Joseph L., detached Naval Air Station, Pensacola, Fla., to Aircraft Squadrons, Battle Fleet.

July 3)

Kauffmann, Lt. Frederick B., uncompleted portion orders May 24, 1926, revoked; to temporary duty Naval Air Station, Pensacola, Fla.

Judy 3)

Kauffmann, Lt. Frederick B., uncompleted portion orders May 24, 1926, revoked; to temporary duty Naval Air Station, San Diego, Calif., to U. S. S. Colorado.

July 6)

King, Ensign John W., 3rd, detached Naval Air Station, San Diego, Calif., to U. S. S. Colorado.

King, Ensign John W., 3rd, detached Naval Air Station, Pensacola, Fla., to Aircraft Squadrons,

King, Ensign John W., 3rd, detached Naval Air Station. Pensacola, Fla., to Aircraft Squadrons, Battle Fleet.

Klein, Comdr. Jacob H., Jr., detached from all duty, resignation accepted July 15, 1926.

Lawbaugh, Lt. Larue C., detached Naval Air Station, Pensacola, Fla., to Aircraft Squadrons, Scouting Fleet.

Lee, Ensign Charles L., detached V. S. S. Baubridge, to temporary duty Naval Air Station, Pensacola, Fla.

Lehman, Ensign George W., detached Naval Air Station, Pensacola, Fla., to Aircraft Squadrons, Scouting Fleet.

Leith, Lt. Ernest W., detached V. F. Squadron I. Aircraft Squadrons, Battle Fleet, to Naval Air Station, Pensacola, Fla.

Leith, Lt. Ernest W., detached V. S. S. Coghland, to temporary duty Naval Air Station, Pensacola, Fla.

Lishman, Chief Carpenter Clifford J., detached Naval Air Station, San Diego, Calif., to V. S. S. Altair.

Lit. Lt. Ernest W., detached Squadron I., Aircraft Squadron San Diego, Calif., to V. S. S. Altair.

Altair. (July 6)
Litch, Lt. Ernest W., detached Squadron I, Aircraft Squadrons, Battle Fleet, to Naval Air Station, Anacostia, D. C. (July 22)

Lockhart, Ensign Robert G., detached U. S. S. Netuda, to temporary duty Naval Air Statien. Pensacola, Fla.
McChery, Lt. Comdr. Howard R., (DC), detached U. S. S. datorado, to Naval Air Station, San Diego, Calif. (Luly 6), McCord, Lt. Comdr. Charles G., detached U. S. S. Hiright, to Naval Air Station, Pensacola, Fla.

McElroy, Ensign Frederick K., detached U. S.
Flusser, to temporary duty Naval Air Station,
Pensacola, Fla.
McGauley, Lt. Carleton, detached Naval Air Station,
Scouting Fleet.
McKay, Lt. James II., detached VO Squadrons 3,
Aircraft Squadrons, Scotting Fleet U. S.
Little Station, Planting Fleet Comparison of the Compar

McKay, Lt. James II., detacned v.O. Squadrons of Aircraft Squadrons, Scotting Fleet to U. S. S. Detroit.

McKenna, Lt. (j.g.) Francie J., detached Naval Air Station, Pensacola, Fla., to Aircraft Squadrons, Scotting Fleet.

McMeullen, Chief Machinist George L., detached Nicraft Squadrons, Battle Fleet, to Naval Air Station, Pensacola, Fla. (June 26) McPeake, Ensign Lawrence J., orders May 14, 1926, modified, to Naval Air Station, Pensacola, Fla., for temporary duty.

Marple, Ensign Matthlas M., Jr., detached Naval Air Station, Pensacola, Fla., to Aircraft Squadrons, Battle Fleet.

Martin, Lt. Harold M., detached Naval Air Station, Pensacola, Fla., to Aircraft Squadrons, Battle Fleet.

Masek, Lt. Comdr. William, detached Utility Plane Division 2, to command Scotting Plane Squadron, Aircraft Squadrons, Scotting Plane Squadrons, Lt. (j.g.) Silas B. detached V. O. Sunadrons

Moore, Lt. (j.g.) Silas B., detached V. O. Squadron 2, Aircraft Squadrons, Battle Fleet, to Naval Air Station, Pensacola, Fla. (June 25) Morgan, Ensign Henry E., detached Naval Air Station, Pensacola, Fla., to Aircraft Squadrons, Battle Fleet,

Station, Feinsacola, Fla., to Afferalt Squadrons, Battle Fleet. (July 3)
Moss, Ensign John B., detached Naval Air Station, Pensacola, Fla., to Aircraft Squadrons, Scouting Fleet. (July 2)
Ober, I.t. James M., orders May 15, 1926, modified, to U. S. S. Patoka. (July 20)
Ogle, Ensign Gerald B., detached Naval Air Station, Pensacola, Fla., to Aircraft Squadrons, Scouting Fleet. (July 3)
Pawlikowski, Lt. (j. g.) Leo P., detached Naval Air Station, Pensacola, Fla., to Aircraft Squadrons, Rattle Fleet. (July 2)
Peck, Ensign Edwin R., detached Naval Air Station, Pensacola, Fla., to Aircraft Squadrons, Battle Fleet. (July 2)

Peck, Ensignation, Pensacola, Fla., to Aircraft (July 3)
Battle Fleet.
Perry, Lt. John, detached to V. F. Squadron 1,
Aircraft Squadrons Battle Fleet, to Naval Air
Station, Pensacola, Fla.
Peterson, Ensign John V., detached Naval Air Station, Pensacola, Fla., to Aircraft Squadrons,
(July 3)

tion, Pensacola, Fia., (July 3)
Battle Fleet. (July 3)
Pollard, Lt. Russell V., detached Aircraft Squadrons, Sconting Fleet, to Naval Air Station, N. O. B. Hampton Roads, Va. (June 25)
Porter, Lt. (j.g.) Dewey G., detached Naval Air Station, Pensacola, Fla., to Aircraft Squadrons, (July 2)

Station, Pensacola, Plon (July 2)
Battle Fleet. (July 2)
Raby, Capt. James J., detached Navy Air Station,
Pensacola, Fla., to Command Aircraft Squadrons, Scouting Fleet. (July 3)
Rassieur, Ensign William T., detached Naval Air
Station, Pensacola, Fla., to Aircraft Squadrons,
(July 2)

Rassieur, Ensign William T., detached Naval Air Station, Pensacola, Fla., to Aircraft Squadrons, Battle Fleet. Reddington, Ensign William H., detached Naval Air Station, Pensacola, Fla., to Aircraft Squadrons, Battle Fleet. Guly 2) Redfern, Chief Carpenter William E., detached Naval Training Station, Great Lakes, Ill., to Aircraft Squadrons, Battle Fleet. (June 30) Rembert, Ensign Edward, detached Naval Air Station, Pensacola, Fla., to Aircraft Squadrons, Scouting Fleet. (July 2) Rhea, Ensign Fitzhugh L., detached U. S. Kidder, to instruct Naval Air Station, Pensacola, Fla.

Rnea, Ensign Fitzhugh L., detached U. S.S. Kidder, to instruct Naval Air Station, Pensacola, Fla. der, to instruct Naval Air Station, Pensacola, Fla., to Aircraft Squadrons, Scouting Fleet.

Roberts, Lt. (j.g.) Frederick W., detached V. O. Squadron 3, Aircraft Squadrons, Scouting Fleet, to Naval Air Station, Pensacola, Fla., (June 25) Rooney, Ensign Joseph J., detached Naval Air Station, Pensacola, Fla., to Aircraft Squadrons, Scouting Fleet, (July 23) Savelle, Chief Machinist Mark A., detached Aircraft Squadrons, Battle Fleet, to Naval Air Station, Hampton Roads, Va. (July 22) Scott, Lt. Carl A., detached aide on staff, Aircraft Squadrons, Battle Fleet, to Naval Air Station, Pensacola, Fla.

Selby, Lt. (j.g.) Malcolm E., detached V. T. Squadron 2; Aircraft Squadrons, Battle Fleet, to Naval Air Station, Pensacola, Fla.

Wiright; to Naval Air Station, Pensacola, Fla. (July 26) Sime, Lt. Comdr. Thomas, detached U. S. S. Wright; to Naval Air Station, Pensacola, Fla.

Simrell, Lt. (j.g.) Warren F., jr., detached Receiving Ship. New York, to Naval Air Station, Pensacola, Fla.

(July 20) Sissen, Ens. Thomas U., detached U. S. S. Tennessec: to instruct Naval Air Station, Pensacola, Fla.

(July 3) Smith, Lt. (j.g.) Donald F., detached U. S. S. Tennessec: to instruct Naval Air Station, Pensacola, Fla.

nessee: to instruct Naval Air Station, Pensacola, Fla.

Smith, Lt. (j.g.) Donald F., detached U. S. S.

Worden, to temporary duty Naval Air Station, Pensacola, Fla.

(July 20)

Smith, Lt. Walten W., detached V. O. Squadron I. Aircraft Squadrons, Battle Fleet, to Naval Air Station, Pensacola, Fla.

(June 25)

Soucek, Ens. Zeus, detached Naval Air Station, Pensacola, Fla., to Aircraft Squadrons, Battle Fleet. (July 3) Fleet. Squaurons, Battle Spangler, Ers, Selden B., detached Naval Air Sta-tion, Pensacola, Fla., to Aircraft Squadrons Battle Fleet.

Fleet.
Spangler, Ens. Selden B., detaem.
Spear, Lt. Tayler (D.C.), detached Naval Air Station, Lakehurst, N. J., to Naval Station, Guam.
Snow, Lt. Comdr. Harold E., detached Naval Academy, to temporary duty Naval Air Station, Pensacola, Fla.
Stewart, Lt. (j.g.), Edmund T., (S.C.) detached Naval Air Station, Lakehurst, N. J.; to U. S. S.
Lexington,
Storrs, Ensign Aaron P., 3rd, detached Naval Air Station, Pensacola, Fla., to Aircraft Squadrons, (July 2)
Battle Fleet.
Gaude E., detached Naval Air

Lexington

Storrs, Ensign Aaron P., 3rd, detached Naval Air Station, Pensacola, Fla., to Aircraft Squadrons, Battle Fleet.

Sullivan, Ensign Claude F., detached Naval Air Station, Pensacola, Fla.; to Aircraft Squadrons, Couting Fleet.

Thomas, Lt. Comdr. Raymond G., detached Edgewood Arsenal, Edgewood, Md.; to temporary duty Naval Air Station, Pensacola, Fla.

Thewatt, Lt. Troy N. order June 28 revoked; to continue duty Naval Air Station, Pensacola, Fla.

Thewatt, Lt. Troy N. order June 28 revoked; to continue duty Naval Air Station, Naval Oper. Base, Hampton Rds., Va.

Tomlinson, Lt. William G., detached V. F. Squadron I, Aircraft Squadrons, Battle Fleet, to Naval Air Station, Anacostia, D. C.

Treadwell, Ens. Paul C., detached Naval Air Station, Pensacola, Fla.; to Aircraft Squadrons, Scouting Fleet.

Undergaft, Lt. William N., detached Naval Air Station, Pensacola, Fla., to Aircraft Squadrons, Scouting Fleet, Charles, Char

#### ARMY AIR SERVICE ORDERS

THE following Army Air Service orders have been issued as of the dates indicated in

been issued as of the dates indicated in brackets:
Anderson, Capt. Samuel H., reserve, South Bend, Ind., to active duty at McCook Field, Dayton, O.
O. Technical Sergeant, Guy W., Mitchel Field, N. Y., retired.
Bassett, 1st Lt. Edwin H., reserve, to active duty at Langley Field, Hampton, Va. (July 23) Bassett, 1st Lt. Eugene B., from Crissy Field, San Francisco, Calif., to duty as commanding officer, Burgess Field, Uniontown, Pa. (July 22) Beau, 1st Lt. Lucas W., jr., from Bolling Field, D. C., to Philippine Department. (June 28) Benson, 1st Lt. Joseph W., from Hawaiian Department to Scott Field, Ill. (June 28) Benton, 1st Lt. John W., from Crissy Field, Calif., to Hawaiian Department. (July 6) Black, 2nd Lt. John W., from Kelly Field, Tex., to Fort Sam Houston, Tex.
Borum, 1st Lt. Fred S., leave of absence, 1 month. (July 12) Bradley, Maj. Follett, leave of absence, 1 month.

Borum, 1st Lt. Fred S., leave of absence, 1 month.

(July 12)
Bradley, Maj. Follett, leave of absence, 1 month.

(June 25)
Broberg, Capt. Oliver W., from McCook Field, O.,

to Canal Zone.

Brookings, 2nd Lt. Robert L., from Chanute Field,
Rantoul, Ill., to Bolling Field, D. C. (July 23)
Browne, Maj. Charles J., from Philippine Department to Washington, D. C.

(June 28)
Burwell, Maj. Harvey B. S., from Kelly Field,
Tex., to McCook Field, Dayton, O. (July 1)
Canfield, 1st Lt. Dwight J., leave of absence, 2
months, 4 days.

(July 2)
Cassiday, 1st Lt. Benjamin B., from Brooks Field,
San Antonio, Tex., to Kelly Field, Tex. (July 6)
Chaney, Maj. James E., designated commandant,
Air Service Primary Flying School, Brooks
Field, San Antonio, Tex.

(July 12)
Clark, 1st Lt. John M., from San Antonio, Tex.

to Kelly Field, Tex.

(July 12)
Connell, 1st Lt. Samuel M., from Mitchel Field,
L. L. N. Y., to Brooks Field, San Antonio, Tex.

(July 12)

L. I., N. 1., to Brooker (July 127) Conch, 2nd Lt. Howard H., from Balloon and Air-ship School, Scott Field, Ill., to Langley Field, Hampton, Va. Cressey, 1st Lt. George G., from Aberdeen Prov-ing Grounds, Md., to Hawaiian Department. (June 28)

(Continued on page 132)



### Peace Time Planes in Quantity Production

### The Star in the Sky

Whether on the wing of a mail plane, a bomber, a navalreconnaissanceplane or a commercial carrier, the tri-color star of The Glenn L. Martin Company holds the same significance to the experienced observer—engineering supremacy—fine workmanship and unremitting care—experience dating back to the infancy of the art seventeen years ago—DEPENDABILITY.

LTHOUGH in many sections of this country a plane in flight in the sky or parked in a field is a sight sufficiently usual to occasion no comment, few people have any conception of the present size and solidarity of the industry. If you should ever wish to impress your non-flying friends with the growth of aviation, simply tell them that a single airplane factory (the Glenn L. Martin plant) has unfilled orders for planes on its books which total to three million dollars.



#### ARMY AIR SERVICE ORDERS

ARMY AIR SERVICE ORDERS

(Continued from page 130)

Crom, Capt. William H., from office of Chief of Air Corps, Washington, D. C., to Bolling Field, D. C.

Cummings, 1st Lt. Charles M., from Hawaiian Department to Brooks Field, San Antonio, Tex.

(June 28)

Davies, 2d Lt., Clinton William, from Selfridge duty.

Field, Mt. Clemens, Mich., to active duty.

(July 3)

Duncan, Capt. Early E. W., leave of absence, 1 month.

Earcekson, 2d Lt. William O., from Balloon and Airship School, Scott Field, Ill., to duty at Scott Field. Lt. Uzal G., from Balloon and Airship School, Scott Field, Ill., to duty at Scott Field.

School, Scott Field, Ill., to duty at Scott Field. (July 2)
Farthing, Capt. William E., leave of absence, 1 month.

I the George G., reserve, to active duty at Scott Field, Ill., to Glies, 2d Lt. John B., reserve, to active duty at Fort Crockett, Tex.

Fort Crockett, Tex.

Gothlin, 1st Lt. Olive, P., jr., from Hawaiian Department to San Diego, Calif.

Graves, Ist Lt. Gilbert S., leave of absence, 2 (July 22)
Graves, Ist Lt. Gilbert S., leave of absence, 2 (July 22)
Griffin, Capt. Calvin E., from Rockwell Field, San Diego, Calif., to Mayo Clinic, Rochester, Minn.

Grishm, 1st Lt. James L., from Little Rock, Ark., 10 Kelly Field, Tex.

Haskins, 1st Lt. George W., reserve, to active duty at McCook Field, Dayton, O.

Healy, 1st Lt. James A., leave of absence, 1 month.

Hewitt, 1st Lt. Leland R., from Maxwell Field, Ala., to Little Rock, Ark., as instructor to National Guard.

Hicks, 2d Lt. Joseph H., leave of absence, 1 month 11 days. (July 2). Leave of absence, 1 month 11 days. (July 2). Leave of absence, 1 month 11 days. (July 2). Leave of absence, 1 month 11 days. (July 2). Leave of absence, 1 month 11 days. (July 2). Leave of absence, 1 month 11 days. (July 2). Leave of absence, 1 month 11 days. (July 2). Leave of absence, 1 month 11 days. (July 2). Leave of absence, 1 month 11 days. (July 2). Leave of absence, 1 month 11 days. (July 2). Leave of Chief of Air Service to Detroit, Mich. (July 1).

Hopkins, 2d Lt. Joseph Gerard, from Brooklyn, N. Y., to Selfridge Field, Mt. Clemens, Mich. (July 1).

Ingalls, 2d Lt. Fred A., from student at Chanute Field, Rantoul, Ill., to Scott Field, Ill. (July 6) Jacobs, Capt. Lynwood B., orders to Fairfield, O., changed to Fort Benning, Ga. (July 16) Fartbing, Capt. William E., leave of ab

Jones, 1st Lt. Aaron E., from Boston, Mass., to
Panama Canal Zone. (July 6)
Jordan, 1st Lt. James B., leave of ahsence extended 1 month. (July 20)
Krick, Master Sergeant Frank, 9th Airship Co.,
from Scott Field, Ill., to Mitchel Field. N. (July 16)

Kyle, 2d Lt. Reuben, jr., reserve, to active duty at Fort Crockett, Tcx. (July 7) Landers, 1st Lt. Sigmund F., from Philippine Department to Dayton, O. (June 28) Liggett, 1st Lt. Arthur G., orders to Bolling Field, D. C., amended to: Selfridge Field, Mich.

McDaniel, 2d Lt. Carl B., leave of absence, 1 month and 14 days.

McDaniel, 2d Lt. Carl B., leave of absence a month and 14 days.

McPike, 1st Lt. George V., from McCook Field, Dayton O., to Walter Reed Hospital, Washington, D. C., for treatment.

Martin, 1st Lt. Pardoe, leave of absence, 1 month, 15 days.

Martin, 1st Lt. Pardoe, leave of absence, 1 month, 15 days.

Mayhue, 1st Lt. Don W., from San Antonio, Tex., to Hawaiian Department.

Mayen, 1st Lt. Bert P., reserve, to active duty at Langley Field, Hampton, Va.

Moffat, 1st Lt. Reuben C., from Walter Reed Hospital, Washington, D. C., to McCook Field, O., as student, to active duty, McCook Field, O., as student, to active duty, McCook Field, (July 1). Leave of absence 2 months and 2 days.

Moran, 1st Lt. William K., from Canal Angelone.

(July 1), Leave of absence 2 months and 2 days.

(July 3)

Moran, 1st Lt. William K., from Canal Zone to Kelly Field, Tex.

(June 28)

Moyer, 1st Lt. Max F., from Akron, O., to Hawaiian Department. (June 28), Resigned.

waiian Department. (June 28). Resigned.
(July 15)
Norwood, 2d Lt. Donald W., leave of absence extended 1 month. 10 days.
Palmer, 2d Lt. Ivan M., reserve, to active duty at Fort Crockett, Tex. (July 72)
Parkin, Capt. Walter F., jr., reserve, to active duty at Langley Field, Hampton, Va. (July 88)
Pitts, 1st Lt. Albert B., from San Diego, Calif., to Chanute Field, Rantoul, Ill.
(July 13)
Prudue, 2d Lt. Branner P., transferred to Infantry, Second Division, Fort Sam Houston, Tex.
Reeves, 1st Lt. Dacbe M., from Kelly Field, Tex., to Washington, D. C.
Robinson, 2d Lt. Irvin A., infantry, detailed in Air Corps; from Canal Zone to Primary Flying School, Brooks Field, Tex. (July 12)
Searby, 1st Lt. Edmund W., F. A., detailed in Air Service from U. S. Military Academy, West Point, N. Y., to Brooks Field, Tex. (July 2)

Shankle, 1st Lt. Clarence E., from Canal Zone, to Boston, Mass., National Guard Instructor.

Shankle, 1st Lt. Clarence E., from Canal Zone, to Boston, Mass., National Guard Instructor.

(July 10)

Sherr, 2d Lt. Robert L., from Chanute Field, Rantoul, Ill.. to Bolling Field, D. C.

Shively, 1st Lt. James C., from Kelly Field, Tex., to Hawaiian Department, revoked.

Simonin, 1st Lt. Arthur E., from Langin Field, Moundsville, W. Va., to Canal Zone. (June 28)

Sorenson, Capt. Edgar P., appointed asst. commandant, Air Corps Engineering School, McCook Field, Dayton, O., vice 1st Lt. Edwin E., Aldrin.

Smyth, 2d Lt. Tbaddeus E., transferred from Air Service to Infantry, assigned 2d Division, Fort Sam Houston, Tex.

(July 7)

Snavely, 2d Lt. Ralph A., leave of absence, 1 month.

Souza, 1st Lt. William B., leave of absence, 2 months.

Streett, 1st Lt. St. Clair, from Langley Field, Mich.

Sullivan, 1st Lt. Charles W., from Canal Zone to San Antonio, Tex.

Volandt. Capt. William F., from McCook Field, O., to Philippine Department.

(June 28)

Waite, 2d Lt. Gordon T., from Balloon and Airship School, Scott Field, Ill., to duty at Scott Field, Watkins, 2d Lt. Dudley W., leave of absence 20 (July 2)

Field.
Watkins, 2d Lt. Dudley W., leave of absence 20
(July 3)

days. (July 3)
White, 2d Lt. Edward H., from Balloon and Airship School, Scott Field, Ill., to duty at Scott
Field. (July 2) Williams, 1st Lt. Randolph P., from Balloon and Airship School, Scott Field, Ill., to duty at Scott Field. (July 2)

Airship School, Scott Field, Ill., to duty at Scott Field. (July 2)
Wittkop, 2d Lt. Hilbert M., leave of absence extended 17 days. (July 6)
Wolf, 2d Lt. Paul W., leave of absence, 1 month 16 days. (July 25)
Young, 2d Lt. Leslie F., from Balloon and Airship School, Scott Field, Ill., to Langley Field, Hampton, Va.
The following cadets, graduates of U. S. Military Academy, Class of 1926, appointed 2d lieutenants, Regular Army, and assigned to Air Service: Turner Ashby Sims, William Murlin Creasy, Jr., Alfred Henry Johnson, Robert Eugene Mousseau Des Islets, Samuel Russ Harris, Jr., Holger Nelson Toftoy, Edward Davis Rainey, Jr., Shelton Ezra Proudhomme, Benjamin Peter Heiser, Prentice Edward Yeomans, Charles Winchell McGeehan, Henry Raymond Baxter, John Prichard Woodbridge, Morris Robert Nelson, James Burwell, Marvin John McKinney, William Benjamin Hawthorne. (June 29)



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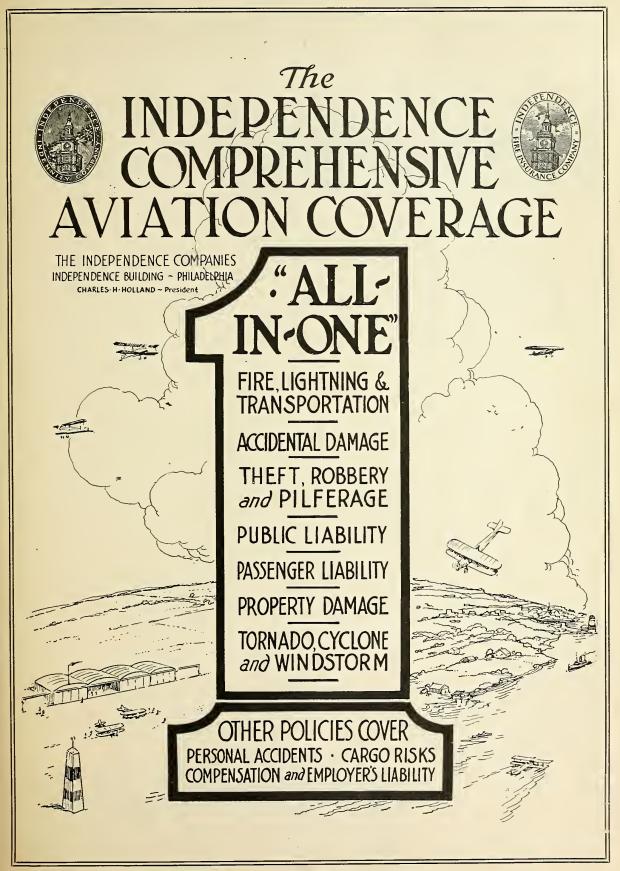
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## WITH the INDUSTRY



newver Field, Washington, D. C., the southern terminal of the P. R. T. Air Service.

### RECORD SPEED IN AIR-PORT CONSTRUCTION

O'N the evening of July 8 the officials of the P. R. T. Air Service, Inc. decided to erect immediately an air station of the most modern type at Hoover Field, Washington, D. C., the southern terminal of the Philadelphia and Washington passenger air mail route. This field was to be inaugurated on July 15.

They called upon William E. Arthur & Company to erect this building complete ready for use within five days.

At noontime on Friday, July 9, Mr. Arthur received a verbal order from the officials of the P. R. T. Air Service to proceed at once with the construction. Speed being a part of the satisfactory service of this company Mr. Arthur chartered a plane at Philadelphia and flew on to Washington, starting delivery of materials on job within two hours. Saturday, July 10, at noontime actual construction started. Thursday morning, July 15, at 11 a. m. building was completed, but on account of the heavy rains inauguration of field did not take place until Friday the 16th.

This speed in construction is remarkable inasmuch as the building is 54 feet long, 23 feet wide, 16 feet high, built of reinforced concrete foundations and floors over which was placed wood sleepers and wood finished floors, with solid brick walls throughout, Spanish tile roof, steel French casement windows and plastered throughout with special sand finish on walls and ceilings, all plumbing and electrical service complete.

The building consists of baggage room and U. S. Air Mail Department, private office and public telephone booth, waiting room for passengers with souvenir and refreshment stand, modernly furnished rest rooms with large Spanish piazza entering on to a large terrace which was completely sodded with grass within the time mentioned.

This lay-out is unique, inasmuch as there are two large gates at the entrance of terrace from flying field which open out against the wheels and tail section of plane safeguarding passengers from injury by revolving propellers, etc.

William E. Arthur & Company are also building the most modern hangars in the country at this field, which work will be completed in about three weeks, in addition to other work on the field.

### P. R. T. AIR SERVICE SESOUI TO CAPITAL

THE Philadelphia Rapid Transit Company began passenger air service Friday, July 16, between the Navy Yard, Philadelphia, and Hoover Field, Washington, D. C. Planes leave Philadelphia at 9:30 a. m. and 1:45 p. m. and Washington at 12:00 noon and 3:30 p. m. The distance is 125 miles and the flying time is one hour and a half each way.

The fare is \$15 one-way; \$25 ior a 15-day round trip ticket. It is made so low in order that as many as possible may learn the comfort, safety and speed of this latest method of transport.

P. R. T. Air Service buses leave 237 South Broad street, Philadelphia, 45 minutes before departure of planes, and Hotel Washington in Washington, 20 minutes before departure. Buses will also meet the planes on arrival. There is no extra charge for this service.

Each plane carries 8 passengers, and each passenger is permitted 30 pounds of baggage free. 25c a pound will be charged for excess baggage.

P. R. T. Air Service also carries the air mail between Philadelphia and Washington, under contract with U. S. Post Office Department.

The service is under Mitten Management. The operating manager is Lieutenant Victor Bertrandias, a pilot of 11 years' experience, member of Rickenbacker's famous war squadron, round-the-world flyer, Chiet Inspector at McCook Field and well-versed in commercial aviation. His assistant is A. A. Priester, former assistant manager of Royal Dutch Air Lines.

The pilots are: Lieutenant Alton Parker, alternate pilot with Byrd and Bennett on the polar flight, former Marine instructor with 9 years' flying experience and one of Amer-

ica's most skillful flyers; Lieutenant Edwin Musick, 13 years' experience, instructor during war; Lieutenant William DeWald, formerly pilot in U. S. Air Mail Service.

### AERO SHOW AT THE SESQUICENTENNIAL

OFFICIALS of the Sesquicentennial in Philadelphia late in July turned over 60,000 square feet in the Transportation Building for a combined government and civilian aeronautical show. Everybody in American aviation was invited to participate without being charged for floor space. Within six days approximately 20,000 square feet had been reserved by representative concerns. This was an indication that the industry welcomed an opportunity to enter the first still air show held in this country since 1920.

The fact that the official exhibits of the U. S. Government bureaus are housed in the Transportation Building adds to the general public interest. Displayed among the sections containing remarkable representations from the Bureau of Forestry, Department of the Interior, the Weather Bureau, Department of Commerce and the like, one finds aircraft models from the Smithsonian Institution and the National Advisory Committee for Aeronautics, all arranged so that the most casual visitor can understand them.

For example, the models of the Advisory Committee are so outfitted that anybody can see the minutest details of their operation, how they are flown and why it is possible for them to remain in the air.

At the Naval Aircraft Factory, League Island Navy Yard, an aviation exhibit had been set up as a part of the Sesquicentennial celebration, under the supervision of Captain George C. Westervelt, manager of the factory. This exhibit, which alone would be worth the price of admission to the exposition grounds, has now been moved to the Transportation Building where it is an important feature of the national aircraft show. Chief among the Navy exhibits is the huge NC-4, the first flying machine to cross the Atlantic.

The U. S. Army Air Service is preparing a fine exhibit including both new and old equipment, the latter to be taken to Philadelphia from the service museum at McCook Field



The P. R. T. Air Service terminal at the Navy Yard, Philadelphia, Pennsylvania.

# Cairo-Cape-Cairo-England

"The most practical and solid achievement yet achieved in World Aerial travel."

Daily Telegraph
22:6:26

Four Royal Air Force Fairey machines fitted with NAPIER engines fly 56,000 miles.



"EVER before have a number of aeroplanes, flying in company, carried out without a hitch an extended journey over continent and ocean, over high land and low, and in great temperature contrasts.

The four British machines which landed here (Lee-on-Solent) to-day had flown 14,000 miles without any trouble of any nature to cause delay, and without engine renewals or stoppages, or worry of any kind.

The engines were Napier Lions, and it is a point of interest that all the escort machines also were Napier driven.

The four machines covered an aggregate of 56,000 miles without mishap, and it is noteworthy that the high altitude aerodromes at Tabora, Johannesburg and Buluwayo, where the air is so thin that it seriously impairs efficiency of engines and planes, gave in this case no trouble."

Daily Telegraph, 22nd June, 1926.

For consistent reliability and efficiency install the

### NAPIER

The finest Aero Engine in the World D. NAPIER & SON, Ltd., ACTON, LONDON, W.3



The four Fairey-Napiers at Naples enroute from Capetown back to England.

### IRELAND AIRCRAFT, INC.

A NEW commercial aircraft company, the Ireland Aircraft, Inc. of Garden City, L. I., N. Y., has been organized. This concern, having full confidence in the future of civil aviation, intends to confine its activities strictly to commercial work specializing in custom-built ships while carrying its stock models in production.

The president and chairman of the board of directors is G. S. Ireland, who has been in the aeronautical industry for years and is well-known throughout the country by those who have been associated with aviation. There are two other directors: C. Townsend Ludington of Philadelphia, president of the Ludington Exhibition Company and a director of the National Air Transport, Inc., D.

J. Brimm, Jr., formerly of the Curtiss Airplane & Motor Co., Inc., and now chief engineer and general manager of the Ireland Aircraft, Inc.

The new company has had its belief in commercial work confirmed and has been given a flying start by booking orders for eight of the Ireland "Meteors."

#### LINCOLN AIRPORT

T HE new Lincoln Airport is nearing completion. It will have one hangar 60 x 120; another 50 x 60; new gas station, and preparations are being made for service of all kinds for the airplane public.

The field is eighty acres in size and located directly south of the city. Aviators passing through may easily pick up the field by locat-

ing the State Penitentiary southwest of Lincoln and following directly south, one and one-half mile on the main highway. The field is marked with a large circle in center and other markings on top of the hangars. All flyers are invited to use the field. There will be no charge for anything outside of actual service.

The Lincoln Standard Aircraft Company report that they have just completed their second shipment to Nicaragua, and the local sales for planes and parts are exceeding those of previous years.

#### REPORT AVAILABLE

Meteorological Conditions Along Airways— By W. R. Gregg

T HIS report, prepared at the suggestion of and for publication by the National Advisory Committee for Aeronautics, is an attempt to show the kind of meteorological information that is needed, and is in part available, for the purpose of determining operating conditions along airways. In general, the same factors affect these operating conditions along all airways though in varying degree, depending upon their topographic, geographic and other characteristics; but in order to bring out as clearly as possible the nature of the data available, a specific example is taken, that of the Chicago-Fort Worth Airway.

A copy of Report No. 245 may be obtained upon request from the National Advisory Committee for Aeronautics, Washington.

### SALES FOR AUGUST ONLY

I carry a complete stock of Liberty motor parts. Hispano Model I, 180 h.p. Hispano motors and Model A 150 h.p. motors, Packard motors, and Curtiss V2 motors. Magnetos for almost any make airplane motors.

SPECIAL SALE On all material During August G. F. Rosenfield
P. O. Box 65, Mt. Rainier, Md.

NOW IS THE TIME TO BUY THESE ITEMS



All new kite balloon outfits consisting of balloons, ropes, baskets, winches, valves, in fact everything for the outfit as shown in this picture, but truck on which the winch is mounted. Everything in original boxes, never unpacked. Original cost to government about \$40,000. While they last, complete outfits,

\$2500 EACH

## ANNOUNCING

### The New Woodson Mail and Sport Plane

Divided axle with 8 ft. tread

Adjustable stabilizer and fin



Steel tube fuselage and tail

Excellent visibility

THE new Woodson Sport Plane, fitted with the Wright E-4 engine carries a pay load of 800 pounds and seats five passengers.

The power plant is removable as a unit, with radiator, oil tank, etc., attached to the mount. A change can be made to any of the following motors in 45 minutes: Salmson, Hisso, Wright J-4, Curtiss K or C-6, OX-5 or Liberty Six.

### ——PERFORMANCE—

 With Salmson

 Maximum speed
 135 m.p.h.

 Minimum speed
 45 m.p.h.

 Pay load
 800 pounds

With Wright J-4

Maximumspeed130 m.p.h.Minimumspeed42 m.p.h.Pay load800 pounds

With 180 Hisso

 Maximum speed
 125 m.p.h.

 Minimum speed
 40 m.p.h.

 Pay load
 .700 pounds

With OX-5

 Maximum speed
 90 m.p.h.

 Minimum speed
 38 m.p.h.

 Pay load
 350 pounds

WOODSON ENGINEERING CO., BRYAN, OHIO



The pathfinders for the Second Commercial Reliability Tour for the Ford Trophy. (left to right) Harold J. Wymer, Detroit News; William Ross, mechanic; Lt. L. C. Elliott, pilot; H. G. McCarvoll, tour manager; Frank Bogart, Detroit Innes; Ray (ollins, traveling referee; J. P. Adams, Detroit Advant (Club; Charles E. Planck, Detroit Free Press.

### THE FORD TOUR

THE pathfinder airplane for the second annual Commercial Airplane Reliability Tour for the Edsel B. Ford Trophy, took off from the Ford Airport at Dearborn on July 13. The machine, a Douglas transport from Wilbur Wright Field, Fairfield, Ohio, was piloted by Lieut. L. C. Elliott, of Selfridge Field, with William Ross as mechanic. It carried as passengers H. G. McCarroll, manager of the tour; Ray Collins, traveling referee; J. P. Adams of the Adcraft Club; Frank Bogart of the Detroit Times; Charles E. Planck of the Detroit Free Press; and

Harold J. Wymer of the Detroit News.

The pathfinder plane covered 2,500 miles, visiting 13 cities and 11 states, in approximately 30 hours of flying time.

Thirty-eight planes, representing twenty-two manufacturers, are entered in the contest starting August 7. They will fly over a route 2,000 miles long. The itinerary is as follows: Leaving Detroit on August 7 to Kalamazoo, to Chicago same day; Sunday in Chicago; Monday leave Chicago for Milwaukee; Milwaukee Monday night: Tuesday leave for St. Paul; Tuesday night in St. Paul; Wednesday leave for Des Moines;

Wednesday night Des Moines; Thursday leave for Lincoln; Thursday night at Lincoln; Friday leave for Wichita; Friday night Wichita; Saturday St. Joseph, remaining in St. Joseph over Sunday; leave St. Joseph on Monday for Moline; Monday night Moline; Tuesday leave for Indianapolis; Tuesday night Indianapolis; Wednesday leave for Cincinnati; Wednesday night Cincinnati; Thursday leave for Cleveland; Thursday night Cleveland; Friday Fort Wayne, remaining in Fort Wayne on Friday; leave for Dearborn on Saturday and arriving in Dearborn, Saturday, August 21.

Facilities for checking and starting the planes will be arranged at each stop, where officials of the tour will inspect each airport and make arrangements for gasoline, oil and accommodations for the 100 persons who are expected to be on the tour. An air meet to be held at Monroe, Mich., August 21-22-23-24. Monroe is just 30 miles from Dearborn, between Toledo and Dearborn.

In addition to the \$20,000 general prize fund and the Ford trophy, each contestant will receive \$350, as well as a chance for lap and other prizes given by the cities where the tour will stop. St. Paul has offered a silver and gold trophy and William B. Stout, of Detroit, has posted a \$1,000 prize for the lighter airplane class. Also, each city will contribute \$1,000 to the general fund and provide gasoline and oil. Detroit will contribute \$60,000 which will be donated by banking houses, the Detroit Real Estate Board, business and civic clubs and individuals.



The Elias M-1 plane has a speed range of from 47 to 126 mi. per hour.

DURING tests and in actual flying service, no structural failure of any kind has occurred in the type MI airplane. All metal construction, except wings; droppable fuel tanks; extra

large tires and wide track landing gear are features of construction which make this ship particularly well adapted to the severe service of air commerce over difficult territory.

### G. ELIAS & BRO., Inc., BUFFALO, N. Y.

Experienced Constructors of Original Types of Aircraft Convertible for Use Over Land and Water.

## 'AIRCO'

### TWIN-MOTORED AMPHIBIAN

"SAFETY FIRST" ON LAND, WATER AND AIR



Four and six-passenger models closed and open

The AIRCO Amphibians provide Safety, Speed and Comfort. They are luxuriously equipped and provide ideal transportation for commuters, air mail lines and commercial air traffic.

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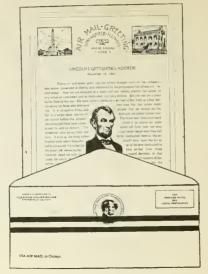
AND KAUFMAN & BAER COMPANY, PITTSBURGH, PA.

### FAST FLYING SERVICE

A MONG the varied activities of the Curtiss Flying Service, Inc., of Garden City, Long Island, New York, fast express cross-country flying occupies a prominent place. These trips almost always come without any notice and are always made in an emergency and therefore an arrival at the destination on time is imperative.

A flight of this kind was made recently by the Curtiss organization and is one of the longest emergency trips without preparation ever made by them. On June 22, at about 11:00 a. m., R. W. Durrance, of Durrance & Co., Brokers, New York, Jacksonville and Tampa, Florida, telephoned the Curtiss Flying Service, Inc., announcing that he would arrive at their field at 12:30 p. n. the same day and that he must get to Clearwater, Florida, the next day before the closing of business.

This passenger was delayed in New York and did not get out to Curtiss Field until 2:30 p. m., and the ship, a Curtiss K-6 Oriole equipped with wing radiators, one of the fastest ships on the field, piloted by Arthur Caperton, was in the air on its way at 2:45. The first stop was made at the Naval Air Station, Anacostia, Washington, D. C., for gas and oil. Pope Field, Fort Bragg, North Carolina, was reached at nine o'clock that night. Here the ship was serviced and the pilot and passenger spent the night. The officers and men of Pope Field are exceptionally considerate and helpful to civilian



Souvenir air mail letter and envelope.

pilots and did everything possible to speed the Oriole on its way.

At 4:45 the next morning the ship was off, encountering fog and rain all the way to Augusta, Georgia, where gas and breakfast were taken aboard. Leaving Augusta at 9:30 a. m. Mr. Durrance was landed on the golf links of the Bellaire Country Club, just half a mile from the Court House in Clearwater in plenty of time to complete his

#### SOUVENIR AIR MAIL

A UTHORITY has been granted for a Special Air Mail Flight from the Illinois State Fair Grounds on August 27. A branch postal and airplane station will be maintained on the State Fair Grounds during the annual State Fair. A cancellation stamp is being prepared which will be used for the first time for this special flight.

W. H. Conklin, Postmaster of Springfield, Illinois, is an enthusiastic promoter of the Air Mail Service. The souvenir envelope and enclosure shown on this page is an example of one of his activities to attract the public to the advantages of the Air Mail. The envelope was originated for use on the inaugural flight on Contract Air Mail Route No. 2, April 15. The souvenir letter has recently been added, containing the records "Air Mail Greeting—Springfield, Ill. Where Lincoln Lived."

The letter and envelope is presented with the compliments of the Springfield Post Office to anyone who will send it by air mail to Chicago or from there by train to any city in the United States.

### NEW WORLD RECORD

CAPTAIN ARRACHART, a Frenchman, recently established a new world record by making a non-stop, non-refueling, straight line flight from Paris to Bassorah, Persian Gulf,—a distance of 2,750 miles, using a Potez airplane equipped with the French Renault water-cooled engine.

### MEYROWITZ LUXOR GOGGLES

Comfortable, widevision g o g g l e s with correct ventilation preventing fogging or steaming

The Compositable Large Curved Lens CLAMP

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NOW \$6.75

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U. S. Air Service Model 6

With ground polished and cylindrical bent white lenses ...... \$10.75
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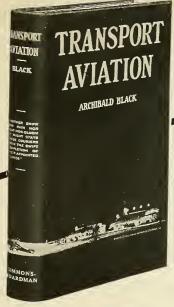
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With first quality white lenses \$9.75
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LUXOR Goggles No. 6

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London
Detroit
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JUST OUT



The first BUSINESS book

on

### TRANSPORT AVIATION

By ARCHIBALD BLACK
Air Transport Engineer

254 pages, 107 illustrations,  $5\frac{1}{2} \times 8\frac{1}{2}$ , \$3.00 net, postpaid

Flying services have come to occupy a recognized position in the business of transportation. It is fitting, therefore, that the "House of Transportation" should publish the first business book on transport aviation. This book covers the fascinating story that would appeal to all but gives facts and figures that will prove of the utmost value. This book is the first attempt to cover every angle of air transportation from the design of the airplane to the operating costs and organization of an air line.

The author, Archibald Black, is one of America's foremost aircraft engineers. He was formerly consulting engineer of the United States Air Mail Service. In 1925 he was chairman of the Aeronautic Division, American Society of Mechanical Engineers. For the past sixteen years Mr. Black has gathered together facts and figures and information on the commercial airplane and put them in this book. The scope of this work will astound all those who read it.

## A guide book for the potential investor and business man A text book for the aeronautic student An absorbing story of progress and achievement for the layman

In this new book the business man can profitably dig into many pages of facts on the economics of transport aviation—pages that give costs and returns on operation and maintenance. These figures are not based on theory but on actual practice. The banker and investor will be particularly interested in Chapter 17, Air Transport Investment and Operating Cost, the designer, in Chapters 10 and 11, The Design of Passenger Airplanes and The Design of Freight and Mail Airplanes. And the professor, teacher and student will find that the text is illus-

trated with many photographs of transport airplanes, engines and equipment as well as maps, graphs, and advanced designs of freight and passenger types. At the end of each chapter are tables of data gathered from actual airline experience, covering every phase of aircraft construction, maintenance and performance. A complete index affords ready reference to any and all points concerning the commercial and technical operation of airlines for those in existence and for contemplated air systems.

### The Chapter Headings Tell the Story

Introduction; Scope and Coordination of Air Transport; Air Transport in Foreign Countries; Air Transport in the United States; Factors Governing the Development of Air Routes; Possibilities of the Airplane in Transport; Influence of Design Upon Operating Costs; Engines for Transport Airplanes; General Requirements of Transport Airplanes; The Design of Passenger Airplanes; The Design of Freight and Mail Airplanes; Airplanes; Airplanes; The Design of Freight and Mail Airplanes; Air

ways and Landing Fields; Landing Field and Maintenance Equipment; The Cost of Maintaining Engines in Air Transport; The Cost of Maintaining Transport Airplanes; Air Transport Organization and Personnel; Air Transport Investment and Operating Cost; Reliability of Airplanes in Transport and Appendix. (Appendix— Tabulated Data on American and Foreign Airplane Engines and Transport Airplanes.)

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You may see this latest Simmons-Boardman book absolutely free for 10 days. All you need to do is to send in the coupon and the book will be sent without obligation of any kind whatsoever. If you do not find it worth double the small price of \$3.00, why just return it and that closes the matter.

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Send me postpaid for TEN DAYS' FREE EXAMINATION a copy of Black's "Transport Aviation" for \$3.00. If I do not desire to keep the hook I will return it in good condition within 10 days, and that will close the matter, or I will remit \$3.00 in full.

City.....State.....

### HEADQUARTERS OF THE AIR MAIL MOVED

THE headquarters of the Air Mail Service which since October 1, 1924, have been maintained at Omaha, Nebraska, were removed to Washington, D. C., on July 1, 1926.

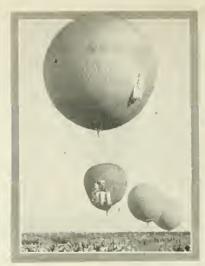
It has been found that the continuance of the headquarters of the air mail service at Omaha was no longer necessary and that this branch of the Post Office Department can better be administered from Washington

The Omaha headquarters were in charge of Stephen A. Cisler, superintendent of the Air Mail Service, with D. B. Colyer, assistant superintendent.

### CINCINNATI WOMAN TO FLY ON FORD TOUR

NE of the Ford Tour entrees will be a Waco, equipped with a 180 h.p. Hisso, belonging to Mrs. Talton Embry, mother of T. Higbee Embry, president of the Embry Riddle Company of Cincinnati. Piloted by Lieut, John Paul Riddle, junior partner of the Embry Riddle Co., Mrs. Embry expects to fly the entire tour, and is probably one of the most enthusiastic of all the contestants.

It is through Mr. Embry that the Commercial Aviation Reliability Tour will visit Cincinnati, and it is his organization that will handle the business details of the part that Cincinnati plays in this tour.



Wide World.

Start of the Elks' Balloon Race.

### RECORD BALLOON FLIGHT

THE Detroiter piloted by Charles D. Williams, assisted by A. G. Schlesser, on July 15, won the Elks' balloon race, which was held during the Elks' national convention at Chicago. Landing at Jennings, Fla., 854 miles from the starting point, this entry of the Detroit Flying Club is believed to have broken a record for distance.

### TRAVEL AIR ENTRIES IN RELIABILITY TOUR

T WO of the most interesting entries in the Commercial Airplane Reliability Tour this year are the ships entered by Travel Air, Inc. Both are equipped with wheel brakes and many other improvements to meet the requirements of commercial work,

The "Whirlwind"-motored Travel Air, piloted by Walter H. Beech, general manager of Travel Air, Inc., is fully equipped with every type of instrument manufactured by the Pioneer Instrument Company, including the earth inductor compass. Mr. Golds boro of the Pioneer Company will be navigator of this entry. The other is a Wright 1.2 motored ship flown by chief pilot C. E. Clark. Excellent flying records are expected of both ships in the tour.

### RUSSELL MFG. COMPANY AWARDED CONTRACT

A CONTRACT for 25,000 yards of one-half inch, and 25,000 yards of one-eighth inch shock absorber cord for use in aircraft, has been awarded by the United States Government to the Russell Manufacturing Company.

This company has a complete plant in which they manufacture all the rubber utilized in their elastic fabrics, of which a very large amount is used in the aircraft industry. A district sales office is maintained in New York, of which F. Acker Thompson is general manager.

### AIRCRAFT



### SUPPLIES

UR customers know about the large volume of JN and OX spares we have on hand. For the benefit of prospective customers, we wish to state that we lease a warehouse of 20,000 square feet capacity and that it is practically full of this material. We have the largest and most complete line in the country.

To introduce ourselves to new customers and expand the volume of our business we make our

### SPECIAL OFFER

Ten per cent off and no crating charges on all plane parts, except rubber and wheels, during the entire months of August and September, guaranteeing immediate shipment. The motor parts are net, except on special quotation on quantity orders. You can't afford to miss this offer. Send for Catalogue No. 3 and order according to these terms for prompt and efficient service.

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Types and equipment to suit all requirements

A co-operative technical service at your command

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### Another Travel Air Development



Special Three-Seater
built around the Wright "E" Motor—180 H. P.

Oh, yes, it has:

Wheel Brakes, Split Landing Gear, and all the Travel Air features and refinements. WATCH TRAVEL AIR IN COMPETITION —And it does this:

Climbs to 1200 ft. in a minute, travels 130 M.P.H. at high speed, makes 18,500 ft. ceiling, lands beautifully at 40 M.P.H.

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TRAVEL AIR MFG. CO., WICHITA, KANS.

#### NEW ENGLAND NEWS

By DANIEL ROCHEORD

DEPRIVED of the aid of local government planes used by reserve and regular army pilots, the New England Air Meet planned for the Boston Airport the Saturday before Labor Day was "washed out." An order from the Chief's office putting an end to "exhibition flights" was interpreted by Captain Christopher W. Ford, assistant Corps Area Officer for New England and himself chairman of the September air meet committee, as rendering impossible the participation of the army aircraft.

More cheerful news comes with the recent vote of the Boston City Council to appropriate \$10,000 to improve the runway surfaces at the Boston Airport. Mayor Malcolm E. Nichols has proved a most airminded chief city executive and promises greater aid next year. His administration has done remarkably well its first half year. His request to the Massachusetts state legislature for authority to appropriate \$25,000 of city funds to improving the airport by installing lighting equipment and additional shops and mechanical facilities, was introduced in the form of a legislative petition: but the time for introducing new matters had passed and the legislature would not waive the rules.

A systematic use of the aerial advertising device of parachute dropping was made in Boston last month by the Baby Ruth Candy Company of Chicago. In Massachusetts there is a law against dropping things from airplanes. Registrar Frank Goodwin of the Registry of Motor Vehicles, through his control of commercial airplane registration and flyer's licenses, enforces this. The candy people dropped their parachutes with advertisements of an American Legion charity boxing carnival rubber-stamped on each chute and Goodwin gave a permit on behalf of the Legion. The chutes were of tissue



International

Pilot Floyd Bennett and Comdr. Richard, North Pole heroes, arrive home.

paper the size of a man's handkerchief and were weighted with a candy bar. Pilot Davis flew his Waco plane beautifully over the city, and each chute would be chased eagerly by a half dozen or more people. The Baby Ruth people have three Wacos engaged in this form of advertising all over the nation. Their sales manager declared it the most effective form of advertising they have ever

and flyer's licenses, enforces this. The candy people dropped their parachutes with advertisements of an American Legion chartity boxing carnival rubber-stamped on each chute and Goodwin gave a permit on behalf of the Legion. The chutes were of tissue

defective form of advertising they have ever tried.

During the month the writer flew down to New York by the Hartford route in a DH, landing at Hartford and at the field at Bethany, Connecticut. Hartford is in beau-

P. & A. Photo.

The Norge crew homeward bound after their flight over the Pole.

Left to right: (standing) H. Riiser Larsen, Frederick Ramm, B. L. Gottwaldt, Oscar Wisting, O. Omdal, F. Malmgren, F. Storm Johnson, Sergt. Alessandrini, Sergt. Caratti and Vincenzio Pomello. (Sitting) Lt. Emil Horgan, Roald Amundsen, Lincoln Ellsworth and Umberto Nobile.

tiful shape. We flew on a week day but over fifteen planes were out ready to fly. At Bethany we found very high grass and millions of daisies. A few men were at the hangar and several Jennies and a Standard were in it. Apparently no great amount of flying had been going. The wind required us to take-off up the slight incline of the field, and to get off in a DH we had to taxi almost to the stone wall at the lower end. The caretakers at the hangar were very pleasant and we recommend the field as an easy emergency landing place with fairly easy approaches.

Coventry, Vermont, is active aeronautically again. Lieutenant Walter E. Cleveland, famous pioneer barnstormer of New England, has a borrowed C-6 Standard there flying as much as his insurance business permits. The field is triangular-shaped and lies about six miles south of Newport, Vermont, off the Black River. "Sam" Connell has landed in there with a big mapping DH and it is good for any small ship. Commercial gas is available.

Service flying in Boston has been averaging about 100 hours weekly for the combined planes of Army, Reserves, National Guard and Navy. The Connecticut National Guard have been active at Hartford.

#### THE SIKORSKY S-35 NEARS COMPLETION

A T the time this issue is going to press we are advised that the S-35 tri-motor biplane under construction at the plant of the Sikorsky Manufacturing Corporation, Westbury, L. I., which will be piloted by Capt. Rene Fonck in the New York to Paris flight for the Raymond Orteig prize, is nearly ready for its maiden flight. All important installations have been made and attention is now centered in checking minor but important details such as gasoline connections, control connections, etc.

It is proposed to fly the big ship for about three weeks prior to the transatlantic attempt during which time it will be thoroughly tested and the need for any necessary adjustments will show itself.

### DUPONT AND STOUT PURCHASE "AIRSTERS"

HENRY B. DUPONT has purchased a Wright "Whirlwind"-motored Buhl-Verville "Airster," with folding wings, brakes, landing skid dolly and all the improvements that make this new ship a really "one-man" plane. William B. Stout, president of the Stout Metal Aircraft Co., has also purchased for his own personal use an "Airster" powered with an OXX6 motor. He will do liaison and observation work for the Stout Air Services which is soon to start operation between Detroit and Grand Rapids.

The owners of Buhl-Verville "Airsters" can run their ships out of the hangar with the aid of the tail skid dolly without assistance, put the wheel brakes full on (eliminating the use of chocks), step on the starter, warm up the motor and when ready can maneuver for taking off.

### E STANGE CONTRACTOR

## The Buhl-Verville "Airster" is a 'one-man' plane



E QUIPPED with Sauzedde wheels and brakes, Eclipse starter, folding wings and tail-skid dolly, the owner-pilot can run his "Airster" out of the hangar, start, warm up his engine and take off without the aid of a field mechanic.

Now ready for delivery at Detroit

Two OX5 "Airsters," completely equipped, with folding wings, \$4100 each. One OX5 "Airster" demonstration model, dual control, fully equipped, with folding wings, \$3000.

## Equipped with the OX5 or Wright "Whirlwind" engine

With the OX5 engine, base price. \$3750

With the Wright "Whirlwind,"
base price.....\$9300

Add to base prices, prices on extra equipment as follows:

Folding wings \$300 Dual control.. \$90
Brake landing Metal propelgear .....\$500 ler ......\$300
Eclipse inertia starter .....\$450

THE performance of the "Whirlwind"-equipped "Airster" is: high speed, 120 m.p.h.; climb, 10,000 ft. in 13 minutes; service ceiling, 17,000 ft.; absolute ceiling, 19,000 ft.; landing speed, 45 m.p.h.

Buhl-Verville Aircraft Company

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DICTIONARY OF AVIATION

By Rebert Morris Pilere. 4278 Words and
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Balloons. Aeronautics aronames
Balloons. Aeronautics aronames
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Plying-fishes; Aerostatics and Aerokinetics;
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#### HASKELITE HISTORY

WHEN the United States entered the world war the necessity for producing airplane fuselages on a large scale led to a thorough investigation of suitable materials. Haskelite, a waterproof plywood, which was then just emerging from the experimental stage, was favorably considered and was so exfensively used during the war that when the emergency ended more than a million dollars' worth of plywood was on the order books of the Haskelite Manufacturing Corporation.

Since the war this waterproof plywood has held and increased its position of leadership in this field having recently received the sixth successive annual contract from the Navy and having been adopted by the Army, Post Office Department and a great number of commercial builders. As typical of the attitude of these builders the Douglas Company in a letter dated April 14, 1924. says, "In the construction of the four world cluisers Haskelite Grade A plywood was used throughout. We have used nothing but Haskelite for the past three years and have been very well pleased with this product and services rendered." The postal planes, with which this company has just taken a hig air mail contract, use this material for leading edge of wings, wing rihs, tail surfaces, rih gussets, fuselage floors, instrument board and cockpit reinforcement.

There are three principal reasons for the popularity of this plywood in aircraft construction. First, its light weight is a tremendous advantage in any plane. For example, a 1/8-in, 3-ply panel weighs only 0.34 lbs. per sq. ft. A fe-in., 3-ply panel weighs about 0.22 lbs. per sq. ft. This light weight is playing an important part in the economy records which are being made with commereial planes. For example, a Ryan M-1 monoplane embodying Haskelite for many applications recently carried a useful load of 320 lbs. greater than its own weight from Vancouver field, Washington, to Los Angeles-a distance of 960 miles in 8 hours and 50 minutes. A check of the gasoline showed that the plane could have continued to San Diego, 120 miles, further, without using the 15-gallons reserve.

Recent tests made by the Glenn L. Martin Company comparing two-ply mahogany with spruce planking on wing beams shows that Haskelite is as strong as the spruce plank-

The third advantage of this material is its waterproof quality. Aircraft are subjected to severe weather conditions. The fact that Haskelite panels can be boiled in water without separating the plies is sufficient proof of the waterproof qualities of the blood albumen glue used in this product.

So many uses for this material have been developed that it has become practically indispensable to aircraft builders today. A recent questionnaire sent to leading builders throughout the country showed 30 uses to which they were putting Haskelite. The following shows the number of huilders reporting each use: 24, fuselages; 19, leading edges: 10. engine bearers; 31, flooring; 4. "INSURANCE

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tail linings; 7, center ribs; 5, tank cover; 8, center cover; 2, pontoon parts; 14, walkway ribs; 30, wing ribs; 22, box beams; 25, seats; 6, rudder; 22, step boards; 12, drag ribs; 13, end and tail ribs; 28, walkway; 6, headpads; 2, propeller spinner; 8, wing covering in slip stream; 23, bulkheads or partitions; 8, pontoon covering; 10, aileron or elevator surface; 32, instrument boards; 8, after deck bulkheads; 3, webs and wing spars; 1, bracing instead of wire; 3, gusset plates on fuselages; 1, landing gear struts like box struts.

Among the many builders using Haskelite are: Advance Aircraft Co.; Aerial Service Corp.; Boeing Airplane Co.; Buhl Verville Aircraft Co.; Consolidated Aircraft Corp.; Curtiss Aeroplane & Motor Co.; Chance Vought Corp.; Douglas Company; G. Elias & Bros., Inc.; Goodyear Tire & Rubber Co.; Huff Daland Airplanes, Inc.; Johnson Airplane & Supply Co.; E. M. Laird Airplane Co.; Lincoln Standard Aircraft Co.; Loening Aeronautical Engineering Corp.; Glenn L. Martin Co..; Ryan Airlines; Stinson Airplane Co.; Swallow Airplane Mfg. Co.; Travel Air, Inc.; U. S. Navy; U. S. Post Office Department.

### LOGAN PREPARES FOR BOOM IN INDUSTRY

F LOYD J. LOGAN, proprietor of the Logan Aviation Co., of Cleveland, Ohio, recently purchased the entire aircraft stock of Ericson Aircraft, Ltd., of Toronto, Can-

### RESULTS OF THE INTERNATIONAL BALLOON RACE

FOR THE 2ND GORDON BENNETT TROPHY. ANTWERP, BELGIUM, MAY 30, 1926.

NI.	D-II	C	D.L.A	4.1	T 1: 250
140	. balloon	Country	Fliot	Aide	Landing Miles
1	Goodyear	-United States-	- W. T. VanOrman-	W W Morton-	Solvesborg, Sweden-534.9
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5	Dolmino	Doloisem	E Demontes	T. V. I Jobliston	Bliedersdorg H a m-
		Deigiani	- L. Demayter	1.t. Valette	
4	Prince	D 1 1			burg, Germany270.3
	Leopold	Belgium	A. \ eenstra		Gross Roscharden
					Oldenburg, Germany-185.1
5	Miramir	Gr. Britain	-Capt. Spencer	C. W. Berry-	-Epse-lez Deventer,
-					Holland 105.0
6	Penaranda	- Spain-	R Molas		Uddel, Holland 95.0
7	Unlyntin	Switzerland	Cont () Pachman	E M.	Harskamp, Holland— 88.2
- 6	D' L'	D SWILZELIANU	Capt. O. Bachman	E. Magg	-narskamp, nolland— 88.2
					Culemborg, Holland- 63.3
9	Banshee [11-	Gr. Britain	-F. A. Baldwin-	H. Spencer——	Veghel-Boxtel. Hol-
					land 57.7
10	Bee	-Gr. Britain	-Capt. Meager	M. F. Steff	-Vryhoevecapelle - Wal-
					wick, Holland 42.8
1.1	Aerostiers I-	- Belgium	- Cant Matton	It Chamart	Tilburg, Holland- 41.0
					Zundert, Holland— 22.3
12	Circusticis III	Te di	C. I Hazzel.	DI. FISAIII	Zundert, monand— 22.5
					Westwezel, Belgium 20.5
14	Ciampino III-	-Italy-	Capt. Harı	Capt. Sivieri-	Westwezel, Belgium- 19.2

#### Disqualifications

"Akren	NAA - United States-	J. A. Boettner H.W. Maxson	· Aide thrown from basket
Vielles	Tiges-France-	G. Bianchet Arnaud	Equipment damaged during inflation
		Cormier	-Equipment damaged during inflation
Alijon	Trance	Cormier	Equipment damaged during innation

ada, consisting of OX5 and Canuck spares and general aeronautical supplies. During the past year, Mr. Logan has acquired the stock of the De Luxe Air Service, N. L. Wright and several other aircraft supply

Prior to engaging in the airplane industry Mr. Logan was one of the largest distributors of automobiles in the northwest; he, in fact, was one of the pioneers in that industry. He there learned the value of service to his customers, and has made it a rule to ship motors, airplanes, and repair parts off to his customers as fast as possible, realizing that a "laid up" customer cannot produce for himself or anyone else.

It augurs well for the stability of the industry to know that this firm, noted for their large variety of aeronautical supplies in stock, are making provision to care for their increasing list of customers. Mr. Logan when asked recently what gave him the greatest pleasure about his business said: "The repeat orders coming in year after year from customers we have supplied for many years."

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"We seek by the promotion and encouragement of civil and commercial air navigation to contribute to national progress and prosperity and to increase the military safety of the country without giving cause for international jealousy or fear."

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seamless and welded

### COLUMBIA

STEEL & TUBE CORP.

Woolworth Bldg., New York

#### AIR-HOT AND OTHERWISE

(Continued from page 88)

progress presently will begin to march backward and that we'll soon be back on wooden ships like Admiral Perry's. Flying? Three sneers! And as for Reserve Aviation in the Navy—rans!

Precisely as follows is the history of the U.S. N. Air

Station down at Rockaway:

Nominally the scouting squadron should consist of 198, all told, 60 officers and 138 men; the fighting squadron should consist of 95, all told, 33 officers and 62 men. But there are no drill quarters and therefore no enlisted men.

Rodman Wanamaker, when he was an honorary deputy Police Commissioner in New York, got the organization permission to drill in the Police Reserve Armory and Commander Boone fixed it for a time so that it could use the facilities of the U. S. S. Wheeling. Then, Uncle Sam, being so impoverished that all the other nations of the world are trying to blackjack and rob him of the surplus which is spilling from his pockets, New York University came to the rescue of this, apparently his most unpopular organization, and let it use a classroom for drill purposes. I hope as many American citizens as read this will let that thought sink in! A college had to loan the Naval Aviation Reserve a class-room for its drills! No equipment except text-books is supplied to the men.

In the meantime the Bureau of Navigation seems to have been worried by the fact that this Reserve Aviation force existed. So it refused it any operating base and the homeless unit turned to the dilapidated hangars at Fort Hamiltion which were so dangerous that visiting naval planes were forbidden to use them at all.

Now we're getting almost down to date. Official inspection of this station led Assistant Secretary Robinson to transfer the unit to Rockaway.

But Rockaway had proved a region far more favorable to pretty girls in very brief costumes than to ambitious youths desirous of becoming parts of a flying reserve competent in war time to protect either American beauties or the rest of us.

The Bureau of Navigation, down at Washington, has got in its usual deadly work. It says the station is for the instruction of new students in the art of flying; and the Bureau of Aeronautics says the station was created to provide flying facilities for the Reserve. And whoozoo? The Bureau of Navigation is all that and then some for it is in a position, as I've said, which corresponds exactly with that of the General Staff in the Army or (in its sphere) the Almighty up on high.

The Bureau of Navigation knows as much about aviation policies as King George knows (or cares) about the mental

processes of Calvin Coolidge's fifth cousin Jack.

So the station there at Rockaway is like a flivver without gas. It may have four wheels and be named after Henry but it cannot operate. So, nobody flies there except the mosquitoes who know no better for they have had no bureaucratic supervision. All they can give you in this training region is malaria. Would to Heaven that were all the Bureau of Navigation could give to these United States. Malaria is curable.

This you will admit is a sad story mates, and I've only told a little of it.

The active Naval unit should be of every possible service to the Associated Reserve unit. Drill places and competent facilities of every kind should be provided by the Navy with good grace and generosity. "Sorry, no planes available now" is the stereotyped Naval answer to Reserve men.

No Naval officer, apparently, has stopped to think that the Reserve men must fly when they can; if they take any time at all for training it is a patriotic sacrifice of their personal business by means of which they live. It is pitiful to see how a uniform and a little authority effects some of the W. M.s (weak minded) servants of Uncle Sam.

This is the New York Naval Reserve Aviation unit's almost pathetic situation. The three others-Boston, Sand Point and Great Lakes—are a little better off. New York has 2 UOs, Boston is fortunate in having 4 UOs, 4 TGs, 1 N9 and 1 JN.

There are more aviators and fewer facilities than anywhere else in the United States at New York, the greatest city, and the point at which most flying skill should be available because it naturally would be the target for any enemy attack upon the nation's wealth and population.

And now, shipmates, attention! Loosen belts, please, for the really hearty laugh. In June an awful rumor wagled up the Avenue in Washington and being reckless, not caring where it went, got into the Navy Department.

There it proclaimed that the Aviation Unit of the 3rd Naval District actually had made progress.

The shock was terrible. Brass buttons paled to the color of mere nickel, the dye in admirals' uniforms paled through sheer horror.

But yo-ho the gallant Navy! disregarding all the terrors of a moment when other admirals were fainting upon every hand and the closest sticking Service barnacles were suddenly so weakened that they almost lost their hold upon their pay-checks (yes, as Fate would have it this awful thing occurred on pay day, too!) a fast-thinking roll-top desk commander snatched his trumpet from its pigeon-holeand, placing it with dauntless courage at his lips bellowed so that his voice was heard over the reverberant groans of agony which rose on every hand.

"Avast! Ahoy!" (You know how it is with admirals, the gallant old sea-dogs must speak the language of their calling.) "If we were anybody else we would be sunk. But as we're we there's hope. Is any one here present who dare ride in an airplane?" Anxiously his eye roved the assemblage but saw no unlifted hands. "Well somebody take a train, then, and get up to New York. Make it an inspection party and see to it that the Aviation Unit is revealed as-well-er-in all its true iniquity. Scoot, damnye!"

Heavens! How gallantly the men of our great Navy spring to action when required by their trusted and adored superiors. The inspection party intrepidly rushed to a combination dinner-smoker on a fast express, though it was actually raining slightly at the time (nothing can keep them when duty's call is heard), and presently were wandering, almost unafraid in the wilds of grim Manhattan.

And did they fear to carry out their Admiral's orders? Not these brave men, with hearts of quartered oak (fumed, \$2 extra), and trained to that hazardous naval maneuver, lying, too. Or you may omit the "too" if you desire. They inspected everything in sight for miles around, including Broadway, and there are many things in sight in the Metropolis, for Uncle Samuel paid the bills; and when they had got back to Washington, they filled the noble Admiral's great heart with a hot surge of joy. Everything pertaining to the Navy in New York was quite all right-except the Naval Reserve Aviation Unit. Broadway was all right, the tea-parties were all right, even the bottles in the lockers at the Brooklyn Yard were quite all right, though not

(Continued on page 150)

### LEARN to FLY



You Fly by Flying. THE **SWEENEY** SYSTEM

ofPractical Airplane Mechanics

The Sweeney System first prepares a student by intensive practical work on arst prepares a student of intensive practical work on motors, building, recovering wings, rigging and all details of construction, repairing and bandling. This is easily and bandling this is easily and the ground who quality of the mon who teach you, look at Spencer and Wimer for instance, Spencer was an army pilot and has been teaching and doing commercial flying aince 1917. Wimer is a college man, went overseas, was with the 1st Air Park as an observer, spent over 200 hours in the air and since the war has been with two big aircraft corporations.

#### Learn to Fly!

Aviation is no longer a mystery—no longer a hazard; no, it is a business, growing greater and more important; you can qualify as a mechanic, engineer, repair man, builder or a pilot.

opens up a world of opportunities for young men.
The Sweeney System has no mlanes to sell, and
sticks strictly to teaching both ground work and
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Million Dollar School insure you the best, most
practical instruction. M-chanics earn \$50 to \$150
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is divided into two parts. First: You are thoroughly taught in the ground school. This fits you as an availation mentaling round school and the ground school and the ground school and the ground school and the ground school and renairing when you have finished this work. You are thoroughly taught motors, etc., and work with thousands of dollars worth of new material, and all types of engines. worth of new material, and all types of engines. Secondly: After completing this work if you want to be a pilot you take ten hours of flying. Now when you understand that two to seven hours is all the average man needs to learn expert flying sall the average man needs to learn expert flying sall the average man needs to learn expert flying. On the ground 5 men are needed for one in the air, but if you want to become a pilot you easily master the work and can go into postal, government, or commercial work. Plyers are in demand, earning big money at fairs taking a passenge, act, \$5 for a 10 minute flight is postly fine pay.

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get paris FHREWORKS:—Bomb, \$4; flag shell, \$3.75; huge smoke trafl (lasts 5 min.), \$3.50; spectacular night plane display— (last 14 minutes) with instructions, \$36; red forches (burn nearly twenty minutes),

red torches (burn nearly twenty minutes), 81, 50.
New JN1D airplane, \$1350; slightly used JN4D's, \$1075 and up; good used chanck, 2975; newly linen covered Oriole, less motor, tip-top condition \$12375; high-lift C-6-motored 3-place hiplane, 120 miles per hour, \$3600; splendid used Liberty-motored 4-place Dayton Wright, \$3,000; 160 h.p. Mercedes motored 3-place Standard (located in West), \$1075; these ships have always been well atored and are splendid buys.
New high-compression Liberty 12-cyl, 400 h.p. motor, \$1650; new Liberty 6-cyl, 200 h.p., \$823; new 80 h.p. LeRbone, \$125; n.w. 2-cyl, 28 h.p. Lawrence, \$125; n.w. 2-cyl, 28 h.p. Lawrence, \$125; n.w. 2-cyl, \$1500; n.w. 2000; n.w. 2000; n.w. 2000; \$1500; n.w. 2000; n.w.

overhauled, 8375; new 220 h.p. Hispano,
15450.
Covers linen or cotton, all made up for
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thread, 50c sonol or \$4 per dozen. Extra flexible 5/32" control cable for Canuck, JN4D or Standard Sc ft.; alleron control cables all made up for JN4D, \$15; elevator control cables, complete set for JN4D, \$8; rudder control cables, complete set absorber cont, 37½c yd.; new fresh S.A. cord 55c yd., or fresh %" shock absorber cord, 57½c yd.; new fresh S.A. cord 55c yd., or fresh %" shock absorber cord, 50c yd.; 26xt wheel \$7.56, without streamlines or with streamlines, \$8.50; 26xt weed but servlecable wheel \$7.55, 25xt weed but servlecable wheel, \$5.75; 25xt

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new casing, \$10, or slightly used \$7,50, or monteraciely used, \$3; newly made tube, and the standard was as a standard standard was as a surplus tube, and tube, and

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(Continued from page 149)

as full as when they had arrived. But that Naval Reserve Aviation Unit. Well, sir, my God, Admiral, it's terrible! We gotta watch out, or it'll get some money out of our appropriation. Can't you do ANYTHING?

Hence that official release from the Naval Department telling the wide world that the Aviation Unit in the 3rd

Naval District actually does not exit.

With regard to this statement, the official report, date "Headquarters, Third Naval District, South and Whitehall Streets, New York, N. Y., 14 July 1926," is interesting. Remember that it is OFFICIAL! We quote it precisely and especially direct attention to the fact that the work by the Naval Reserve Air Unit at Rockaway, which it refers to, was done with only two UOs:

"During the year ending June 30, 1926, the Naval Reserve Unit now at Rockaway made a total of 3.443 flights, totaling 748 hours and 5 minutes. During this period, thirteen (13) students completed primary training and eleven (11) officers were given active duty.

"During the week ending July 3rd, four (4) Naval Seaplanes touched at the station en route to other destinations. There are now nine (9) Student Aviators taking forty-five days primary course of instruction, which ends August

P. S. To all members of the Bureau of Navigation, try and "Laff that off."

#### A NOD AND A WINK

(Continued from page 101)

who hit Paris. In the war our pilots learned to loop, spin and roll. There was no Prohibition over there, and you could see our pilots going into flat spins right in the cafés. And as for rolls, why even the girls learned to roll their own. We've advanced by leaps and bounds. In fact we've done away with bounds entirely in aviation as in other things.

"The war development of planes led to further development for commercial use after the war. Great airliners were constructed and put into regular operation on many airlines in Europe. To-day you may fly from one end of Europe to the other, missing all the peculiar smells of a European railway carriage if you want to. In Italy Mussolini has forbidden the use of garlic in airliners, the only vehicle from which garlic is barred in that country. If you must eat it as you travel, then you must go by train, insured.

"How has this great development been possible in countries that have been torn by the ravages of war, whose manhood has been undermined and rendered dyspeptic by numberless cans of bully beef devoured in the trenches? It has been made possible by government support of commercial aviation. Those governments know that commercial airlines, properly fostered, will strengthen national air defenses by bringing into being trained personnel and equipment that in the event of war could very readily be converted into war personnel and material. Those governments know that men cannot be turned into pilots in less than six months, that no new type of airplane can be developed and put into production in less than a year, and that airplane factories with trained engineers and experienced workmen do not spring into existence at the roll of war drums. Our government does not know that, despite that we spent a year and a half in war and at the end of that time had no American-built airplanes flying over the lines. Another war will prove that to them.

"In America we have lagged far behind in commercial aviation. Why? Ask the government what assistance they have rendered. They will tell you with pride, 'We have followed the helpful policy of letting aviation stand on its own feet. That's what an ultra-modern dancing mother did with her year-old baby who was learning to walk. She let it stand on its own feet right from the first. Where is it now? On its back. Correct!

"At the present time we have a physically successful and financially unsuccessful Government Air Mail flying from New York to San Francisco, so a merchant in Frisco may get a bill in thirty hours telling him how much he owes a New York wholesaler. By train he wouldn't know for four days. Just think what air mail saves him! He saves three days on each bill. If he gets 122 bills during Leap Year he saves 366 days of his time—and that's one year when a man should save. At the end of a year, he's a year ahead. Do you realize what the saving of a whole vear means?

"Also we have several private air mail carriers operating lines subsidiary to this main government trunk line. These lines were started by various good sports who believe in the development of commercial aviation. They do not expect to make money at the start. They are guaranteed nothing by the government. For their services they receive a percentage of the postage on each letter carried. Can you imagine the railroads doing that? Can you imagine a great railroad system running an expensive train for a fluctuating percentage that no man on this very green earth could estimate? Of course you can't, for you know very well that railroads do not operate that way. They count on so much mail and estimate accordingly. business. The air mail carriers get no guarantee. But they are running their lines. That is romance.

"Yet the Government will tell you that they are fostering commercial aviation. What they are doing is giving private operators the privilege of gambling on a very uncertain quantity, hoping they will make out. If they do make out, the government will point at them proudly and say, 'Just see what we have done to help them!'"

(Applause from the local postmaster.)

"A disadvantage of our air mail lines is that the rates vary for different zones, and are so complicated that no one can figure without a rate sheet, and even not then in some cases, how much postage to put on a letter. As soon as anyone gets smart enough to figure rates accurately, an insurance company, recognizing genius, offers him \$10,000 a year as an actuary. Then he feels so rich he says, 'Don't write. Telegraph!'

"For ordinary mail you pay two cents to any part of the country. From New York to San Francisco you pay two cents; and you pay two cents from New York to Brooklyn, or from one street to another. Yet you do not feel that you are cheated when you pay as much for one mile as you do for 2,500 miles. Suppose you had one price from New York to Jersey City, another to Chicago, another to St. Louis, another to Los Angeles. You'd spend half your business day figuring what postage to put on each letter. You'd get so tired of wasting that time, that you'd give it up and send by some slower method where you didn't have to use a calculating machine for half of the towns and guesswork for the others. And that is what many people who have used air mail are doing now. It is too much trouble to get special stamps and figure special rates. So they send by ordinary mail.

"What we need is a lower and less complicated air mail

(Continued on page 152)

### **AVIATORS** PREPARATORY INSTITUTE

Aviators Preparatory Institute offers at low cost to those interested in the operation of aircraft, a complete and thorough course of instruction in

all subjects of practical aeronautics such as is required by the Army, Navy and Marine Corps before actual flight instruction.

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Walter Hinton, formerly U. S. Naval Aviator, pilot of NC4, first flying machine to cross the Atlantic, 1917-18, machine to cross the Atlantic, 1917-18, and the state of the s

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  5. Aircraft Instruments
- 6. Aircraft Engines The Liberty Engine
- 8. The Hispano-Suiza
- 9. Ignition 10. Carburetion
- 11. Aerostatics12. Theory of Flight
- 13. Aerology 14. Air Navigation
- 15. Modern American Aircraft Engine Development 16. Practical Flying In
  - structions

Aviators Preparatory Institute Walter Hinton, President New York 475 Fifth Ave.

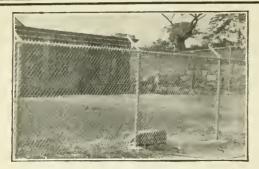
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American School of Aviation Dept. 2775, 3601 Michigan Ave., CHICAGO, ILL.

#### (Continued from page 151)

rate, not rates. Then we would get a large volume of traffic on our air lines. Carrying a lot of mail bags with a little mail in them looks pretty as the plane goes scooting by. But we live by the law and the profits. And so far all that we have is the law.

"Let the Government send all first-class mail by air on main routes; fill the planes, and give the contractor a flat rate per pound that allows him to make a living instead of as at present leaving him to gamble. The railroads aren't asked to gamble and split postage-and they're a grown-up transportation system with hundreds of millions of capital, and Morgan to help out when they need him. Why is the infant air mail asked to do it? Because, like Topsy, it just growed, and a dull uncle is letting it stand on its own feet until it falls over backward.

"And why shouldn't all first-class mail go by air? The pony express was fast and so was the stage-coach, until the train arrived. Then we put all the mail on the train. If we carry parcel post on trains at a loss to oblige the mail-order houses and catch the farmers' votes, why can't we carry letters by air, even at a loss for awhile to oblige ourselves with speed and to boost commercial aviation?"

(Here one of the audience asked an interesting question: "אוו' איז דידן אלמער מאמען lie inquired. He was evidently a Scotchman from Vermont.)

"I don't know," replied Congressman McBarnacle, "You might write Harry Lauder. He does all his thinking in that language.

"There are many phases of the commercial aviation situation other than air mail, but for the sake of brevity. which, next to alcohol, is the soul of wit, I shall not mention them just now, but turn to the Prohibition of aviation.

"The Prohibition of aviation in the Army and Navy, by the General Staff and the High Command, not by the flying officers, understand, has had its deadening effect upon commercial air activities. Their smug attitude of stolid negation towards the airplane in war, their affectionate adherence to the ponderous battleship, their pathetic reliance upon the hysterical anti-aircraft battery, chucking aloft its little shells with all the accuracy of aim of an old maid throwing snowballs, has made the public doubt the value of airplanes.

'If the General Staff were alive to the value of aircraft in warfare they would do their utmost to encourage commercial aviation, and thus build up, at no expense to themselves, a reserve of trained personnel and material which could be converted at need into units of defense: This they have not done. They have political power, yet they have never used that power to urge that commercial aviation be helped in any way, as a possible adjunct to our air defense.

"And why have they never urged that? Because they have never believed in it. And perhaps that is not their fault. We must be charitable and remember that the General Staff and High Command are composed of old men, with old men's ideas. There are some old women among them, too. Here's to the ladies!"

(Congressman McBarnacle toasted them in a glass of water.)

"But it is cheering to know that we have gone far in our development, aided in spite of the Staff by sporting business men and wide-awake flying officers, who can't get the just promotion they deserve, let alone get on the Staff. But, of course, they're too young for that august body, and still lack the necessary qualifying fallen arches. Some of them raised their voice against conditions, and now

the old familiar places in the Army know them no more. "As Mr. Crabbit, of the Modock Association, should say, 'General Mitchell died a martyr to the cause of aviation. But his soul goes marching on, and his martyrdom bears fruit. Already we have \$180,000,000 to spend over a period of five years, thanks largely to the disturbance Bill created.' You've heard of the Farm Relief Bill? Billy Mitchell is the Aviation Relief Bill.

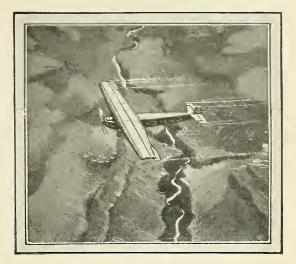
"And now we come to World Disarmament, which holds us spell-bound with its grandeur of purpose, and which fools nobody, I may add, unless they are very innocent indeed. Theoretically, it is a very fine plan—and speaking of plans, as Bobbie Burns, the great Hebrew poet so fittingly observed, 'The best laid plans of mice and men gang aft agley.' Which, translated, means that they go completely flooey. For a sane, peaceable nation to talk of disarmament while nations enraged over the last war are building up their forces and building airplanes in quantity, is precisely on a par with talk of disarming policemen while thugs carry guns.

"I have been to Geneva as a delegate to the Disarmaament Conference—a delegate being a politician on so much too much per day, plus the swindle sheet. In that Conference we discussed cutting down the size of armies and reducing the strength of navies. But we made no mention of limiting the building of airplanes. Not a word of it. Why? Because crafty old Europe realizes that the deciding factor in the next war will be aerial warfare. And they don't want the main war weapon limited. We have limited the navies, because in the last war we learned that we had to keep our battleships and cruisers in port to keep them from being sunk. The only time both the English and German battle fleets ventured out and engaged in combat, both got licked. All that either side used were destroyers and submarines. So we don't mind limiting navies.

"Read the Conference reports. Learn how suavely the subject of war in the air was passed over. No talk of limiting air fleets, hardly a whisper about the destructive powers of modern bombers, not a suggestion that any army unless protected by planes is as helpless as an army of blind rabbits trying to cross Broadway in the rush hours. Not a word of all this, because they don't want any attention drawn to the destructive potentiality of aircraft in war. No, they are willing to limit armies, to decrease navies, to do anything as a polite gesture, but they are careful not to limit the one force that, more than any other, will decide the outcome of the next war. Disarmament? Rubbish! The correct word to describe these proceedings is Dissemblement.

"Remember this: despite verbose chat of Disarmament, World Courts, League of Nations, and Pacifist flapdoodle, this Nation needs more now than ever the power to defend itself. And the most powerful defense is air defense. And the most useful and the cheapest way to strengthen that defense is to help commercial aviation to grow to reasonable proportions.

"There is hope. Here commercial aviation is going along gamely on its own feet—a trifle flat-footed in some cases, even flat-headed in others. But it's going, going. And if it receives even ordinary encouragement from all of us, and intelligent assistance from Washington, it will never be gone. Through the day and through the night, through rain and snow, through fog and storm and difficulties innumerable, it forges ahead, calling for your help in the words of the immortal Al Jolson, 'Mammy! Mammy!"



### Reaching through space

Thousands of hands reach up to guide the aviator over unfamiliar territory, the hands of those who have gone out and painstakingly made surveys and sketches for Rand McNally & Company. Because these men have gone over the terrain foot by foot, the flyer flashes past overhead with all the assurance of one who travels on the ground.

All aviators know how trustworthy Rand McNally maps are. They use the very same maps that are sold everywhere for 35c. They know that trained workers are in the field every day for the sole purpose of keeping them up to the minute. They have learned in actual flight that Rand McNally distances are absolutely correct, that no guess work enters into the making of the contours.

Rand McNally & Company are fully conscious of their responsibility in the close decisions that even the most experienced flyer is sometimes called upon to make. Backed by more than half a century's experience in scientific map making, Rand McNally & Company assure aviators and all others who use these maps that not one leaves their hands that is not perfect for the purpose for which it is intended.

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#### AIR MAIL OPERATORS' VIEWPOINT

(Concluded from page 95)

service and a "Pullman De Luxe" service. The former is operated with the smaller two-passenger planes while the latter is maintained with the 6-passenger Ford planes.

The most rapid railroad service offered between Tampa and Miami from the West to East Coast requires 11 hours and 35 minutes. The airline in comparison with railroad service allows a saving of 72 per cent in time at a surcharge of 57 per cent. The bus service offered between these cities requires 13 hours and 30 minutes while the airline offers a time saving of 77 per cent at a surcharge of 51 per cent.

Major Chambers recently announced the purchase of one 12-passenger, triple-motor Ford plane and 3 Stinson-Detroiter, 4-passenger, cabin planes, which are scheduled to arrive in Florida within two months. These planes will be used for the additional passenger traffic and also on the inauguration of the Atlanta-Jacksonville "leg" of the Airways route, an extension due to be opened immediately on completion of Atlanta's new \$25,000 municipal airport, Candler Field. Inauguration of this route will afford a 24-hour time saving between south Florida and Atlanta.

The Florida Airways Corporation headed by Major Chambers is composed of Lt. John Harding, Jr., round-the-world flyer, vice president in charge of maintenance; V. E. Chenea, vice president in charge of traffic, and E. R. Hart, secretary-treasurer.

The pilots are Chief Pilot Norman W. Potter of San Francisco, H. J. Brady of New York, R. T. Freng of San Francisco and Leonard S. Flo of Omaha. The chief mechanics are E. J. Mitchell, C. C. Maidment, G. V. Dack, L. J. Krentz and A. J. Nassamer. Other members of the organization are J. P. French, in charge of Miami Airport; M. O'Brien, in charge of Tampa Airport and H. C. Henderson, in charge of Jacksonville Airport.

### CHICAGO-ST. LOUIS AIR MAIL ROUTE

By William B. Robertson, President

THE Chicago-St. Louis contract air mail route operated by us has flown 36,340 miles since its inauguration on April 15. We understand that our percentage of operations is 99 per cent.

We have failed once out of 130 trips to deliver the mail to Chicago, and on this particular occasion we were forced down on account of a severe storm at Streator, Ill.

Our company is a closed corporation and we are going into it on our own hook; this air mail contract is right in line with our other aircraft business in which we have been engaged for the last eight years. We believe we have a complete organization and, that our flying cost is the lowest of any of the contractors, namely, 701 cent a mile. This figure is only an estimate, as the depreciation figure is subject to change. We estimate that the ships (Liberty motored DHs, built up in our shops at St. Louis) will last a certain length of time, and if through practical use they do not, then our cost per mile would increase considerably. We do, however, believe from our past operations and experience with airplanes that we are about correct.

St. Louis undoubtedly benefits by the air mail tremendously, and there is plenty of air mail in the country to be had, but it has been proven to us that it is a proposition of education. In addition to advertising in every conceivable manner, it also seems to require a personal call on each business man in his office, explaining in detail the advantage of air mail, the location of the nearest box, kind of stamps to use as well as envelopes, and the rate of postage.

### COLORADO AIRWAYS, INC.

By Anthony F. Joseph
President and General Manager

THE Cheyenne-Pueblo contract air mail route, operated by the Colorado Airways, Inc., was reported by W. Irving Glover, second assistant postmaster general, who recently inspected the route, as doing the second best business of the contract routes.

As our air line has been operating less than two months, the opening date being May 31, it is very encouraging to us, and we are very appreciative of this patronage.

At the present rate, there is no danger of Colorado losing her air mail service. Denver can now deliver mail to any of the fifty largest commercial cities in the United States on the succeeding day. Our connection at Cheyenne with the transcontinental government—operated route in both directions, affords a continuous air service between New York and the other large cities in the East and Middle West, and Denver, Colorado Springs and Pueblo.

Business men appreciate the importance of these connections and the value to their cities of being directly or the air map of the country, which is rapidly becoming a network of routes and which soon will extend to include all forms of commercial aviation.

### ELKO-PASCO AIR MAIL ROUTE

By Frank P. Bell, Traffic Manager

HE Pasco-Elko division of the air mail serves proximately 5,000,000 people in the great Northwest. The boundaries of this service reach from Eugene, Oregon, on the South; Bellingham, Washington, on the North, and Spokane, Washington, the East.

The people of the Northwest are very enthusiastic and proud of their Air Mail Service and are proving this by the daily increase of mail which they are sending over this line. The postmasters, Chambers of Commerce and the various civic organizations of the Northwest deserve credit for the efforts which they put forth to make this line a success.

The pilots encounter various flying conditions over the entire route of the Pasco-Elko Route, for example: In the Pasco district for a hundred miles they encounter strong winds, whirlwinds and sand storms; of the three the whirlwinds are the most dangerous, especially on landing. The rest of the journey is over the Blue Mountains and small valleys into Boise. This end we do not consider difficult, but from Boise to Elko consists of mountain and desert flying. The greatest hazard in this country is the lack of communication if the plane is forced to land, as there are no highways or railroads, and telephones are few and far between. However, we are depending on carrier pigeons in emergency. Each plane is equipped with a shotgun, hatchet, canteen of water, four day's supply of emergency rations and a carrier pigeon. (One of the pilots said that ne'd eat the darn pigeon instead of releasing it.)

The organization consists of Walter T. Varney, conractor; Frank P. Bell, Traffic Manager; Leon D. Cuddeback, Chief Pilot; Charles T. Wrightson, Office Manager; Cris Develesho, Chief Mechanic; four pilots, George Buck, Joe Taff, C. C. Price and G. Guglimeti; and six mechanics stationed at various stations on the line.

### SAFTIBOAT



SAFTIBOAT is more than just an ordinary beamy runabout or hydroplane driven by an aerial propeller. Such a craft while possessing many advantages for shallow water is far from ultimate. Saftiboat, being a scientific advance designed on definite hydro-dynamic reactions, it runs and handles differently from any other boat in the world.

Following several months' intensive experimenting we have been able to greatly increase our speeds with a given power or to maintain the same speed with less power.

Saftiboat draws less water, goes faster with the same power and uses less gasoline per passenger mile per hour than any boat in the world.

Saftiboat's design is protected by patents and patents applied for.

Brownback Motor Laboratories, Inc.

NORRISTOWN, PENNSLYVANIA

THE RYAN AIRLINES (Concluded from page 112)

of commercial aircraft was the photographic flight of H. O. Erickson, former U. S. Air Service photographer. Pilots Barrows and Erickson took off from the San Diego field in a Ryan monoplane at 10:30 in the morning, flew 250 miles down to the delta of the Colorado river, took 20 photographs, ate lunch and returned to San Diego without landing. Some of the ground, or rather swamp, photographed by Mr. Erickson was inaccessable by either boat or on foot.

The history of Ryan Airlines has been one solely of achievement, there has been no endowment fund, paid-in capital on stocks, donations or heavy financial backing. The company has made its way financially by grasping opportunities.

The men behind this organization, T. C. Ryan, president and general manager; B. F. Mahoney, vice-president and treasurer, and J. B. Alexander, factory sales manager, have visualized in their own minds the future of this great industry.

How well this visualization may become realized can best be illustrated by considering the sales record of the Ryan Aircraft Co. During the four months after the Ryan M-1 monoplane had been introduced, definite orders stating date of delivery have been ten airplanes per month!

#### REDUCE OUR AIR MAIL RATES

(Concluded from page 104)

As a basis for discussion and illustration, let's make a definite suggestion:

Two zones instead of three. Zone rate, three cents per alf-ounce. That's over 96 cents per pound per zone; assuming forty letters to the pound, it is \$1.20 per pound per zone. Postcard rate, two cents per zone, which is more than \$2 per pound per zone. Maximum compensation to air mail contractors to be \$1 per pound per thousand miles, being \$2 per ton mile.

If a large volume of air mail is secured through low rates such as the above, planes carrying a ton or more can easily be built. With large, efficient planes and full loads, contractors could easily cut costs to much less than \$1 per ton mile.

Present cost figures, based on a small quantity of air mail, mean nothing. The policy should be "Reduce rates, do big business; then figure costs and base rates on the new figures."

Note that under the above rates all "private" postcards, which now pay two cents postage to go by slow mail, could go by air mail for the same rate anywhere between Boston, Minneapolis, Omaha and Miami. We could do this without losing money because the slow mail rate on such cards is excessive; it should never have been doubled, as it was last year. The New York Times of July 20, 1925, reports Postmaster General New as saying "The increase on the rate of private cards from one cent each to two cents each, while the one-cent rate for the Government postal cards has been continued, has proved to be not only inconsistent, but fails to bring in additional revenue." Note that "doubling the rate brought in no additional revenue"; as a matter of fact, it actually caused a considerable decrease.

Congressional leaders, when framing the postal rates increase bill, figured a \$10,000,000 increase in revenue from doubling the rate on "private" postcards. They used the same brand of reasoning on the air mail, and it's no easy job to sell them a new brand which doesn't lend itself so readily to Congressional methods of figuring profits.

covering, \$150. Uncovered, \$80. Lowers, original covering, excellent condition, \$60. A grade, \$50: uncovered, \$30. Canuck or Jenny upper wings, original covering, good condition, \$75. Canuck lowers, original covering, good condition, \$75.

#### AIRPLANES

Standard J-1 airplanes, new with new OX5 motors, \$1100; with overbauled motor, \$900; with used OX5 motor, \$800; less motor, \$650. T. M. Scouts with LeRhone S0 hp. motor, \$650; with OX5 motor, \$900.

#### INSTRUMENTS— PARTS— EQUIPMENT

Helmets from \$3.50 to \$6.50. Flying suits, summer weight with insignia, \$6.50. Genuine Resistal X.A.K. goggles, \$4: Jumbo Resistal, \$2.50 (special 30-day price).

ON5 Dixie magnetos, brand new, \$16: D81 Berling for OX5, new, \$16: 800 Dixie for Hisso, new, \$30: Simms L-8 new for Hisso, \$20: Simms L-8 for OXX6, new, easy to start equipped for booster, \$25. Oil gauges, new,

baust, 40c. Cam shafts, \$10. Valve actions completely assembled, per cylinder, \$7.50. Complete set of new parts for valve action for one cylinder ready to assemble, per cylinder, \$6.50. Lower crank cases, \$16. Water pumps, \$6. Oil pump assembly, \$6. Berling contact points, each \$3; breaker assemblies, \$7.50. Intake manifolds, each side, \$3.50; exhaust manifolds, each side, \$3.50; intake pipe assemblies \$2. Exhaust stacks with elbows, \$1.50 each. Complete set 50 gaskets, \$3.

#### **SUPPLIES**

New production nitrate dope, 50-gallon drums, \$1.45 per gallon; 5-gallon cans, \$1.90 per gallon; 5-gallon cans, \$2 per gallon; 0-gallon cans, \$2 per gallon. Grade A cotton, 35' wide, per yard, 56c; 72'' wide, per yard, 60c, 75c; 72'' wide, per yard, 60c, Plain tape, 234'', per yard, 6c, scalloped, 2½'', per yard, 6c, Aero Spar varnish, one gallon, \$4: in 5-gallon lots, \$3.75. Valentine Valspar, 1-gallon, \$6.50; 5-gallon lots, \$5.50.

Complete line of Standard J-1 and Hisso parts, nickle steel bolts, nuts, clevis pins, shackles, ferrules, thimbles, wire, etc.

### LEARN TO FLY Courses from \$100 to \$200

Write for complete catalog and literature.

NICHOLAS - BEAZLEY AIRPLANE COMPANY
MARSHALL, MISSOURI.

85 miles East of Kansas City On Chicago & Alton and Missouri Pacific Railroad

#### AIRPORTS AND AIRWAYS

(Continued from page 99)

the white landscape, making navigation more difficult. Railways then become the best guide for pilots.

The location of an airport or small emergency landing field is exceedingly difficult at times particularly when flying in the smoky atmosphere over an industrial district. At an elevation of one mile the airman's horizon represents an included area of 30,000 square miles. An eyeful to be sure but making the task of a strange pilot no sinecure. Checkerboarding the hangar roof in large orange, black and white painted squares simplifies airport location by day while boundary lights placed on the ground at 200-foot intervals outline the landing area at night. Landings at night on well-equipped airports are made with the aid of powerful flood lights, while emergency landings away from established facilities are safeguarded to an extent by parachute magnesium flares released by the pilot to illuminate the area below.

#### AIR NAVIGATION MAPS

Air navigation maps especially adapted to the flyers needs have made cross-country flying, except in bad weather, comparatively simple. Railways, river, highways and lakes—the outstanding landmarks—are prominently displayed, while the changing elevation of the terrain flown over is shown by corresponding color gradients. Much of the detail included on standard maps is omitted and other features added to assist the air navigator in locating landing fields while flying a compass course between terminals. Forty-nine of these so-called strip maps have been prepared by the Army Air Service covering air routes frequently flown, and their use by army pilots during the past four years has contributed substantially to the fourfold increase in flying hours per crash. Printed on a special grade of cloth, selected strips joined end to end, may be wound on the rollers within a small glass topped map case, thus facilitating navigation on long flights and eliminating the necessity for folding or changing maps while in the air. METEOROLOGICAL DATA

Dependable weather information is indispensable to air navigation. Not only should the pilot know before leaving an airport the wind velocities and weather conditions ahead but he must be advised while enroute of an approaching storm or other emergency. The well-equipped airliner will solve this problem through radio communication with the airway meteorological stations, but the great volume of private air traffic soon to be traveling our civil airways will seldom be so equipped. The block signal system of the railways can be adopted to this service, and all traffic flying over an intermediate station toward an area reported dangerous can be blocked and directed to land by displaying a characteristic warning signal. The traffic would then be cleared only upon receipt of a favorable report from the station ahead. Of significance in this respect is the fact that the flying services are now unable to secure daily official forecast reports before 8:30 or 9:00 a. m. In certain localities where flying conditions are ideal this situation would ordinarily cause no delay, but leaving a sea level airport with visibility perfect to cross a range of mountains projecting into the clouds is a responsibility which cannot be assumed until the weather map has been consulted. The ensuing delay results in an average seasonal loss of two hours flying time every morning or the distance between Washington, D. C., and New York City. Airway progress will thus force the demand for earlier weather reports.

(Concluded on page 158)

## AVIATION GASOLINE

ANHANDLE experience in the manufacture of AVIATION GASOLINE is older than the World War itself. Even before Uncle Sam entered the conflict our Company was supplying Aviation Gasoline to the Allies in remarkable quantities.

O PRONOUNCED was our success in the manufacture of this fuel, and so well known were our products, in every State and Field, that during the war we furnished nearly the entire requirements of every Flying Field in Texas.

HE BOYS of Kelly and Brooks Field, San Antonio; Taliaferro Nos. 1 and 2, Ft. Worth; Love Field, Dallas; Rich Field, Waco; Ellington Field, at Houston and Call Field, Wichita Falls, will bear witness to the fact that our Gas entirely meets the demand, and that PAN-HANDLE knows the needs of aircraft, and are equipped to specifically prepare the fuel for the unfailing duty it must perform.

OT ONLY during the war did we furnish Uncle Sam's aircraft, but immediately after the war it was our duty, by contract, to furnish every Government Flying Field east of the Rocky Mountains their entire requirements. And even NOW we are supplying almost all of Texas and Ft. Sill, Okla., their requirements, which represents approximately 700,000 gallons the first half of this year.

HEREFORE, with such a substantial and dependable recommendation you well know our ability in the manufacture of Aviation Gasoline is unquestioned, and we will welcome an opportunity to quote you.







### Dayton Wright (4-place) Liberty 12 Cruiser

Standard D.H. wings and tail surfaces. Extra wide veneer fuselage with seating capacity of four.

Performance is equal to the regular air mail D.H. and has a cruising range of 500 miles.

### PRICE \$2800

Complete with Packard Liberty motor, Bijur self starter and 2 Paragon propellers.

### K. R. COLE

1835 Noble Road

EAST CLEVELAND, OHIO

### (Concluded from page 157) Air Personnel

The Secretary of War has recently extolled the military establishment as a great training school for the pursuits of industrial and civil life. Thousands are now profiting in civil pursuits through the knowledge acquired in a uniform. The exodus of skilled personnel from the Army Air Service has been greater than from any other branch, and resignations by flying officers whose training is said to cost over \$25,000 per officer may be expected to increase with the demand for their services in civil aeronautical activities. The employment of pilots for aircraft operation is one case that admits of no compromise. While 56 per cent of the applicants for flying training at the Army Air Service schools pass the required physical standard, only 30 per cent of those accepted graduate. The average annual earnings of an air mail pilot is nearly \$7,000. The standard of performance is correspondingly high.

The vital need of air transportation today is public interest. "Where there is no vision the people perish." Let us not hold back aviation as we held back the automobile until forced by progress to adopt its advantages. Mankind, always reluctant to accept a change of habits, advances through salutary retrospection of its stupid past. Horace Greely said "Go West." Contemporaneous realtors demand that we go South, the mason travels East, the North has its exponents and most of us have been told to go in another direction, but now comes the call of the air aloft. So drop the cares of a "go and stop" world and ascend to the heights of our eagle's domain. Ban the jargon of trolley cars, taxies and busses—

Come aloft on the wings of progress;

Heed the call of an instinct divine. There's no rift in the lute of achievement, Save to him without noble design.

Soaring thought transcends earth and things earthly,
In the mission of life's greater love.
The control of the world's vain perspective
Is reversed looking down from above.

Come aloft on a flight with an airman; Change your viewpoint and conscience sedate; There's a lesson for those who will profit, And the fetish of fears relegate.

So ascend on a winged Sinai,
Loose the burden of labor's disdain,
Inspiration and love for the things up above,
Make the labor below not in vain.

#### "HELL'S BELLS" O'NEIL

(Continued from page 106)

ners did a getaway in something under nothing flat. Halfa-dozen shells were knocked about like tenpins. When the gunners came back, there was Tubby sitting on one of them lighting a cigarette. Not a scratch on him—and he'd had four Cooper sixteen-pound bombs in his rack when he hit! Luck? My God!

"One night we were roaring back to work after a night in Busigny. We were red-eyed drunk and couldn't find the road. We'd gotten around to 'The Captain has the Croix de Guerre, parley-voo!' in bar-room tenor, when the car takes a neat Immelman, does a split-air turn and plops athwart a crater upside down. I clawed the mud and half a dead horse outa my mouth, and calls the roll. We're all

there but Tubby. We poked round in the débris that someone who had been fighting a war had left, but we can't find him anywhere. Then I give a yell for him and I hear his voice, sort of muffled like, say, 'Lemmelone—umtakinbath.' There he was under the car, up to his chin in shell-hole syrup. If there'd of been an inch less space he'd of been drowned. But not Tubby. Safe and sound he was, without a scratch.

"The cards wasn't right, you see," says "Hell's Bells," "so the flying man's god let it pass. Then one day he raised his thumb to his nose and wiggled his fingers. The way of it was this. The Armistice was fought and won, and the squadron was ordered to Marquis to turn in the ships and report to the repatriation camp at Shornecliffe. Tubby was listed as a student in civil life, and he had a cousin in the Air Ministry who got him special embarkation orders. He was to go direct to Southampton and back to God's Country, traveling like a general. He was to meet his 'Sweet and Only' at the dock, and marry her before his stuff got through Customs. He was all het up over it. Said he'd give a farewell supper in Paris. Took us all down and set us up royally. By the time we'd got to the point of drinking the champagne from the champagne cooler, he decided to have a toast. 'Beslilolesquarronworld!' he toasts, drinks his drink, sits half in and half out of his chair, chair tips over—crashes—and Tubby yells blue murder. We pick him up and I'm a son of a gun if his leg wasn't broken in two places just below the knee!

"He spent three months at a Frog hospital in a plaster cast, missed his boat home, spent four more months at Shornecliffe waiting for that damned, concrete-bottomed tub they called the *Canada* and got a wedding invitation from his girl just before he sailed!

"Which reminds me," says "Hell's Bells," "of a game of golf they once had on the fourth floor of the Air Ministry."

(In September.)

#### IMPORTANCE OF AIR INSURANCE

(Concluded from page 102)

Pilferage; Public Liability; Passenger Liability; Property Damage; Tornado, Cyclone and Windstorm; Personal Accident; Cargo Risks; Compensation and Employer's Liability.

Horatio Barber of Messrs. Barber & Baldwin, Inc., general agents for the Aviation Insurance Department of these companies, in 1912, wrote the first aviation insurance ever taken out.

From a practical business standpoint, concerns which might profitably employ airplanes in making shipments, are unwilling to do so unless insurance be available. In fact, the president of the American Express Company has stated that his great organization will use planes when adequate insurance is available.

Insurance, therefore, cannot fail to stimulate commercial aviation to a marked degree, while private owners and flyers, like private automobilists, are sure to multiply in the very early future, provided they can, like automobilists, obtain insurance protection.

In a progressive, rather than a merely altruistic spirit, the Independence Companies are glad to contribute this flying stimulus, believing that it will be of advantage to aviation as well as good business for themselves. For exactly the same reason, they are happy to feel that it will enhance national safety in the deplorable event of another conflict.

## ODDS and ENDS in AIRCRAFT SUPPLIES offered at LOW PRICES

---Everything new unless otherwise stated.

The new supplement to our catalog contains over 500 illustrations—write for it.

trations—write for it.	
ITEM ARTICLE	PRICE
1-Paper hall parachute 18" diameter (good advertising stunt) box of 24	\$1.00
2—Aluminum powder (the best way to aluminize your plane) per 1-lb.	1.50
3-Aluminum sheets from 26 to 2 gauge sizes up to 48 x 144"	
4—Aluminum Rivets, flat, round and hrazier heads, all sizes	at market prices
5-Duralumin sheets from 22 gage up to 5 gage all size sheets	prices
6—Duralumin rivets, holts and wood screws, various sizes	2.00
8—Tape, reinforcing, ½" wide, looped edge (A. S. Spec. 16027-A) 75-yds.	1.75
9—Tane, cotton, selvage edge, 1½" wide, 110-vd, rolls	1.50
10—Cotton fabric (Govn't Spec. 16004-C) 36" wide, 100 yds	50.00
11—Cotton fahric (Govn't Spec. 16004-C) 40" wide, 100 yds	55.00 3.00
13—Exhaust manifolds for Liberty motors, each side	5.00
14-Wind shields old D. H. type	.50
15-Glue, hide (used bot) the best (Govn't Spec. 98-14000-E) per lb	.40
16-Glue, casine (used cold) (Govn't Spec. 14020-C) per 1h	.50
17—Gage, (gasoline) for Jenny tanks 18—Magnetos, Dixie 800 complete (right or left)	3.50 25.00
19—Tachometers, new calibrated N. C. R. chronometric with $7\frac{1}{2}$ or 8'	25.00
shaft	15.00
20-Altimeter (Taylor) 5" face, 15,000 ft	3.00
21—Altimeter (Taylor) 3½" face, 25,000 ft. (slightly used)	5.00 10.00
22—Altimeter (Schneider) 3½" face, 25,000 ft	.25
24—Valves, exhaust, for OXX-6, per set of 8	3.00
25-Valves, exhaust, for 150 Hispano, light stem \$1.00 each; heavy stem	1.50
26—Celluloid 21 x 50" per sbeet 1/16" thick	5.00
27-Strainers, gasoline line, with connections, aluminum	3.00
not	5.00
20 Picton pine for OXX-6 motor per set of 8	2.00
20 Distanguings for 150-180 Hispano motor, beyeld or plain	.50
31—Prop. covers for Liberty or Hispano (made of hest waterproof canvas) 32—Crank cases for Liberty 6 Hall-Scott motor, upper or lower	2.00 40.00
22 Final numb for Liberty 6 (made by Miller, Los Angeles)	18.00
24 Oil drive-shaft with gear. Left motor.	10.00
35—Water pump with gear, for L-6 motor	18.00 .25
35—Water pump with gear, 15 26 %" long, per package 37—Gasoline shut-off cocks for ½" pipe. 38—Helmets, best grade Gabrather lived	.25
38—Halmets, best grade Gabardine cloth, trimmed with leather	4.00
	6.00
	4.50
40—Goggles, best grade "N.A.R. (Leathertex" (made to latest Navy Spec.) all sizes	25.50
	7.50
43—Tank 30-gallon center-section tank for Standard J1	45.00 20.00
43—Tank 30-gallon center-section tank for Standard 31 43A—Tanks for JN4D 44—OX-2 motor as received from Govn't (used) 44—OX-2 motor as received from seculent condition ready to use.	125.00
44—OX-2 motor as received from Goville (documents)  45—Hispano Model A complete in excellent condition ready to use	425.00
	250.00
	900.00 250.00
47—Liberty 12, overbauled and complete)  48—Benz 6-cyl, 120 h.p. (overhauled and complete)  49—Le Rhone 80 b.p. complete with tools and spares in original hox  49—Le Rhone 80 b.p. complete with tools and spares in original hox	85.00
49—Le Rhone 80 b.p. complete with tools that in good condition) 50—Liberty Hall-Scott 6, Delco ignition (used; in good condition)	400.00
50—Liberty Hall-Scott 6, Delet ignition (used slightly). 51—Jenny, natural finish, in perfect flying condition (used slightly).	825.00
51—Jenny, natural finish, in perfect flying condition (used singlety). 52—"Bumblebee" light plane, complete, ready to fly	,000.00
53-D. H. Gallaudet Mail Flane, seasoning 100 m.p.h.; lands 40 m.p.b.;	
control in rear seat; a hours crame to and extra	500.00
almost new Liberty motor with all latest improvements and at Hartzell propeller.  Hartzell propeller  36 x 8 straight side, 2" axle, brand new tires and 54—Wheels and tires, 36 x 8 straight some complete assembly (wheels, tire	,300.00
54—Wheels and tires, 36 x 8 straight side, 2" axie, brand new tires and	
54—Wheels and tires, 36 x 8 straight suc, 2 and, tubes (made to Navy specifications) complete assembly (wheels, tire and tube)	45.00
and tube)	es.
And a thousand and one other aeronautical items at reasonable price	

Be sure and write for our illustrated catalog; it's free.

# JOHNSON AIRPLANE & SUPPLY CO. Dayton, Ohio

The largest aeronautical supply house in the country

### MID-SUMMER SALES

Hisso propellers, Westmore, new stock, plain or rawhide-tipped (will fit any Hisso or L6 Hall Scott), \$27.50. Only 3 Hall Scott L6 220 h.p. engines, new test run, wonderful motor for any ship (easy to install in Standard), complete and crated at \$575.

Special helmets-very good at \$5. Everyone recommends them; ask any good pilot. Beware of imitations. This helmet cannot be duplicated and sold for less.

Ships—Here is your chance to get a real plane. 1 Breguet (needs rebuilding and covering), \$2250. 1 Breguet 5-passenger (needs wings recovered, otherwise excellent), wonderful bargain, \$2850. 1 Breguet 5-passenger equipped with 300 h.p. Renault FE12. New French covered wings, motor overhauled, set up, tested, \$450 F.O.B. Can be converted to use L12 motor at very little additional expense. These ships have a very wonderful performance, are of duralumin construction, and land very slowly. They cruise \$95 to 100, carry a very big load, are very staple and are guaranteed to perform at a high altitude. Same type that held the world's altitude record with load for six years.

One small TM scout, converted to OX5 single place, \$850; does 100 m.p.h.; has 38-gal. gas capacity, just the job for cross country, very classy job.

Ailerons and tail surfaces for S.V.A., entire lot \$35. Lot of control surfaces for Avro 504K, \$40. TM lower wings, covered, class A, \$15 each. TM landing gear vees \$1.50 each. DH Standard wood vees \$7 pr. Distance thermometers radiolite, new, \$8.50. New stock 26x4 Jenny, Standard or Canuck casings, \$10.50 each. New special nitrate dope (not soup; real dope), 5-gal, can, \$10. Fiber-lined gas hose, 60c; no forced landings with gas trouble.

New exhaust and cylinder gaskets for OX5. New rocker arm support gaskets,

DH wheels 750 by 125, good, used, \$7.50 each. Jenny wheels 26 by 4, good, used, \$7.50 each. TM wheels 26x3 tire, \$5 each.

We carry a complete stock of all new made up material for repair, operating, or building. Also goggles, helmets, maps. NEW STOCK PAYS.

### YACKEY AIRCRAFT COMPANY

FOREST PARK, ILLINOIS



CAO!

### S. S. White Tachometer Drive Shafts

O UR tachometer shafts have been subjected to the severest tests and have always met every task demanded of them. Built to U. S. Government specifications, of correct design, unsurpassed workmanship and the finest materials obtainable.

We supply them to the U.S. Army and Navy.

The S. S. White Dental Mfg. Co. for many years has manufactured superior flexible steel wire shafts for every industrial purpose.

All lengths carried in stock. Samples furnished to responsible manufacturers.

### The S.S. White Dental Mfg. Co.

Industrial Division

152 West 42d Street, New York, N. Y.

#### AIR MAIL ROUTES IN THE U.S.

(Continued from page 96)

De Havillands, Boeing mail planes and Douglas transport planes are used on this line.

There are 18 terminal fields, fully equipped with lighting facilities, radio stations, and hangars; 89 emergency fields with caretakers. Maywood Field, Chicago, is the Repair Depot of the service. Regular fields are located at New York (Hadley Field, New Brunswick, N. J.); Bellefonte, Pa.; Cleveland, O.; Bryan, O.; Chicago (Maywood); Iowa City, Ia.; Des Moines, Ia.; Omaha, Nebr.; North Platte, Nebr.; Cheyenne, Wyo.; Rawlins, Wyo.; Rock Springs, Wyo.; Salt Lake City, Utah; Elko, Nev.; Sacramento, Calif.; Concord, Calif.; and San Francisco.

New York-Chicago (726 miles) government-operated.

THIS night route was inaugurated July, 1925, paralleling the day operated transcontinental route. Rotating beacon lights about 12 miles apart mark the course from city to city. There are 4 regular or fully equipped landing fields and 44 emergency landing fields with caretaker on this route. Regular fields are located at New York (Hadley Field, New Brunswick, N. J.); Bellefonte, Pa.; Cleveland, O., and Bryan, O.

De Havillands, Curtiss "Carrier Pigeons" and Elias planes are used. Planes and pilots are changed at Cleveland.

CONTRACT AIR MAIL ROUTES

C. A. M. Route No. 1, Boston-New York (192 miles)

SERVICE was inaugurated on this route July 1, 1926, by the Colonial Air Transport, Inc. Daily, except on Sundays and national holidays, trips are made between Boston and New York with one intermediate stop at Hartford, Conn.

The Boston Airport, used at the northern terminal, is located only a few miles from the heart of Boston. The central landing field in Connecticut is the Hartford Airport at Brainard Field on the outskirts of the city. Hadley Field, New Brunswick, N. J., is the southern terminal on this route, from which point connections are made with the government-operated overnight air mail service to Chicago. Teterboro Airport, Teterboro, N. J., is the repair, supply and maintenance depot for the planes on this route.

Planes used in this service are the Fokker "Universal" and Curtiss "Lark," both types powered with Wright "Whirlwind" engines.

C. A. M. Route No. 2, Chicago-St. Louis (278 miles)
On April 15 the first mail was flown over route No. 2,
which is operated by the Robertson Aircraft Corporation.
Northbound trips are made every day except Saturday and
Sunday; southbound trips are made daily except Sunday and
Monday. Stops are made at Peoria and Springfield, and
connection is made at Chicago from the New York and
Chicago overnight air mail route. The landing field at St.
Louis is the Lambert-St. Louis Flying Field, Anglum, Mo.,
which is also the traffic office. The Chicago terminal is at
Maywood Field. Rebuilt Liberty-motored De Havillands
are used on this route.

C. A. M. Route No. 3, Chicago-Dallas (987 miles)

Since May 12, the Chicago-Dallas line has been in daily operation by the National Air Transport, Inc. Stops are made at Moline, Ill.; St. Joseph, Kansas City, Mo.; Wichita, Kans.; Oklahoma City, Okla.; Fort Worth, Dallas, Tex. Connection is made at Chicago from the New York and Chicago overnight air mail route.

The Chicago terminal is at Maywood Field; Dallas terminal, Love Field. Rosencrans Field, owned by the city of St. Joseph, Mo., is route headquarters for power plant maintenance.

Curtiss "Carrier Pigeons" are used on the route, all of which are fitted for night flying. The N. A. T. route is lighted between Oklahoma City and Dallas. They maintain traffic offices at 310 S. Michigan Blvd., Chicago; Chamber of Commerce, Kansas City, and Chamber of Commerce, Dallas.

C. A. M. Route No. 4, Salt Lake City-Los Angeles (600 miles).

One of the most difficult routes, traversing the great American desert and cutting across the Southern end of Death Valley, is operated between Utah and California by the Western Air Express, Inc. Daily trips with one stop at Las Vegas, Nev., are made. It has been in operation since April 17 with Douglas M-2 mail planes. The route connects at Salt Lake City with the transcontinental route.

The Los Angeles terminal air mail port is located seven miles east of the Los Angeles Post Office. Their traffic office is located at 802 No. M. Garland Bldg., Los Angeles. C. A. M. Route No. 5, Elko-Pasco (435 miles).

Running north from the transcontinental air mail field at Elko, Nev., the Pasco (Wash.) route makes one stop at Boise, Idaho, and crosses over the northeast corner of the State of Oregon to Pasco. Trips are made every weekday using Swallow planes with Wright "Whirlwind" engines.

This route, operated by Walter T. Varney, was first opened on April 6. Shortly thereafter operations were suspended in order to complete equipment, but were re-

sumed on June 1. Connection is made at Elko from the transcontinental route.

Radio stations are installed at the three landing fields at Pasco, Boise and Elko.

C. A. M. Route No. 6, Cleveland-Detroit (91 miles).

To the Ford Motor Company goes the honor of being the first to operate a contract air mail route. On February 15 the Detroit-Cleveland air mail line was formally opened by them, and has been operated daily except Sundays and national holidays ever since. It connects at Cleveland with the transcontinental route. Ford-Stout all-metal monoplanes equipped with Liberty engines are used.

C. A. M. Route No. 7, Chicago-Detroit (237 miles).

This route was also opened by the Ford Motor Company on February 15, and is operated daily except Sundays and national holidays using Ford-Stout all-metal monoplanes (Liberty engines).

C. A. M. Route No. 8, Seattle-Los Angeles (1121 miles).

The largest contract air mail route, extending from Seattle, Wash., down the Pacific coast line to Los Angeles, Calif., is to be opened in the near future.

Pacific Air Transport, Inc., will operate this route using Ryan M-1 monoplanes (Wright "Whirlwind" engines). Traffic offices of this organization are located at 511 Corbett Building, Portland, Ore.; Sueter Hotel, San Francisco, Calif.; and 716 W. 6th St., Los Angeles, Calif.

Six stops will be made on this route, at Portland, Medford, Sacramento, San Francisco, Fresno and Bakersfield.

C. A. M. Route No. 9, Chicago-Minncapolis (377 miles).
On June 7, Charles Dickinson opened this daily route
(Continued on page 163)

### NEW and GUARANTEED ENGINE PARTS at REDUCED PRICES

HISPANO		OXX6
Valve, heavy neck \$1.50	Cylinder \$9.50	Cylinder\$12.50
Stromberg carburetor (com-	Piston 2.50	Piston 5.50
plete) 32.56	Wrist pin	Wrist pin
Piston pin	Burd ring	Upper case 50.00
Piston pin bushing	Conrod (with cap) 2.25	Lower case 30.00
Propeller hub lock nut 4.50		Burd ring
Exhaust manifolds (101 long) 30.00		Conrod w. piston (*) 4.50
Water pipes, copper 2.50		Crankshaft 27.50
Water pump 14.50	Intake manifold 6.00	
While front bossing (pair) 200	Camshafts 9.50	Sims mag (w.shim) 25.00
Main front bearing (pair) 5.00	Berling magneto 17.50	All gaskets
Cood wood book	Valve action (*) 5.00	Warner tachometer 2.50
Good used Dank 40.00	valve delion ( )	

<sup>\*</sup> Asterisked items very slightly used.

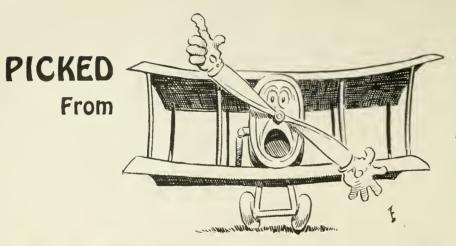
and many other items at correspondingly low prices.

COMPLETE LINE OF GOGGLES FROM 70c TO \$15.00 NAVY HELMETS AND FLYING SUITS

## AIR TRANSPORT EQUIPMENT, Inc. CARLE PLACE, L. I., N. Y.

Phone: Westbury 376

Next to Curtiss Field



The

AERO DIGEST will award a prize of \$5 each month for the best joke published. Only jokes pertaining to the aircraft field will be considered. Address the "Picked From The Air" Department, Aero Digest, 220 West 42nd Street, New York, N. Y.

Victor A. Smith, 1440 Broadway, New York City won the prize for August with the following:

#### WHO FLEW THE NORGE?

We know not what the merits of the argument may be, but we'd like to know who flew the Norge across the Arctic Sea? It seems there's some discrepancy in statements made by those who traveled in the good ship Norge through country that was "froze." Ellsworth says that noble Nobile who designed the wonder ship was nothing but the Captain on that lovely North Pole Trip, but that as a designer he's the best in all creation, though he doubts if noble Nobile knows a thing of navigation. "And furthermore," says Ellsworth, "I must make this frank confession—I took noble Nobile with us as a matter of concession. He was paid a handsome salary-while I spent lots of mon-now he tries to grab the credit and the bright place in the sun. I have high respects for Nobile, I say it and it's true, but I want to see the credit, go where the credit's due." Then Nobile says, "Why Ellsworth, I do recall the fellow-he's the guv we dropped from off the ship when we got up to Teller; the only thing he really did was put up lots of dough-my government put up twice as much, perhaps a trifle more. I took him on at Spitzbergen, a passenger, that's all-and now he tries to up-stage me and take the curtain call. I do not wish the credit but I must admit, I guess, that without me the expedition could not have had success." So while they "air" their troubles, we'd like to know, by George, who really was the hero that flew the good ship Norge.

"No doubt somebody already has an eye on the hot dog concession at the North Pole."

- Wichita Eagle.

Instructor to kaydet: "Where is Jack Hardy?"

Kaydet: "He's up looking for loose change in the air pockets."

Old lady (to pilot who is extracting himself from wrecked plane): "The Lord sure was with you that trip young man."

Pilot: "Well, if He was He sure had a fast ride."

Pilot (to mechanic after climbing out of wrecked plane): "Isn't that a shame I broke my wrist watch."

Mechanic: "That's nothing I can't find my cap."

A man flies, and according to the emancipation of women, woman flies after him. A woman falls, but a man falls for her.

No, Susan, aviators don't put their money in air pockets.

"Why is an aviator's life like a girl's clothes?"
"I give up."

"One slip is enough."

(In 1999) "Maria bring out the aeroambulator and take baby up for an airing."

Passenger (in airplane): Is New York the next stop?

Porter: Yes, sah; brush you off, sah? Passenger: No, I'll get off myself.

Screen Star: "But suppose the airplane should fall...."

Director: "By George! That's a good idea."

Bay: My girl has the makings of a good aviatrix.

Rum: How come?

Bay: She'll go up in the air over nothing, and then land on me.

—New York University Medley.

"Ain't we got no airplanes?" asked the mountaineer of his congressman.

Congressman: "I never said we ain't!"

Mountaineer (excitedly): "I never axt yer is we aint, I axt ye is we is, now is wes or ant wes."

-Charles A. Pursley.

(Concluded from page 161)

between Chicago and Minneapolis via Milwaukee, La Cross and St. Paul. Four Laird airplanes powered with Wright "Whirlwind" engines are used on this route. Connection is made at Chicago from the overnight route.

#### C. A. M. No. 10, Jacksonville-Miami (468 miles)

The Florida Airways Corporation inaugurated this air mail route from Jacksonville to Miami, stopping at Tampa and Fort Myers, on April 1. Their flying equipment consists of four Ford-Stout monoplanes; one Curtiss "Lark"; and 2 Travel Air OXX6's. This route connects at Jacksonville from Penn. R.R. train 105 leaving New York at 1:40 a. m. Mail between south Florida and the north is delivered in Jacksonville in time to be placed aboard the night fast-mail trains for New York, Chicago, Detroit and cities en route. The traffic office is located at 309 Franklin St., Tampa, Fla.

#### C. A. M. Route No. 12, Cheyenne-Pueblo (199 miles)

This route connecting Pueblo, Colorado Springs and Denver with Chevenne, where mail for the east and west may be dispatched via the transcontinental air mail route, is operated every weekday by Colorado Airways, Inc.

#### C. A. M. Route No. 13, Philadelphia-Washington (125 miles)

The Philadelphia Rapid Transit Air Service opened, on July 16, this air mail route between Philadelphia and Washington. Originally it was intended to run during the duration of the Sesquicentennial Exposition only, but will no doubt be continued. The Navy Flying Field is the Philadelphia base and Hoover Field, the Washington terminal. Fokker 3-engined monoplanes are used.

#### OTHER AIR MAIL ROUTES

N 1925, in response to the petitions by summer residents on Labo Winning to the Petitions by summer residents on Labo Winning to the Petitions of the Petitions dents on Lake Winnipesaukee, N. H., the first R. F. D. air mail contract was given to Robert S. Fogg. Daily flights of 43 miles, starting and returning to the Weirs, N. H., and stopping at ten islands, were made by him from July 1 to August 1.

Under the foreign mail appropriation, Arthur E. Cambas, owner of the New Orleans Air Line, holds the contract to fly the eighty miles from New Orleans to Pilottown. The route is now under advertisement for the new fiscal year.

The contract route of eighty-four miles, between Seattle and Victoria, B. C., is operated by Edward Hubbard. It is now under advertisement for the new fiscal year.

John Haho, of Douglas, Alaska, has been awarded the contract to carry the mails between Juneau and Petersburg, Alaska. The contract will run for four years, beginning July 1, 1926, and pay \$7,995 a year.

#### AIR MAIL POSTAGE RATES

Transcontinental (New York-San Francisco) Route

N the transcontinental government-operated route there are three air route zones (1st zone), New York to Chicago; (2nd zone), Chicago to Cheyenne; (3rd zone), Cheyenne to San Francisco. The postage is 8 cents an ounce or fraction of an ounce for each zone or part of zone in which mail is carried by airplane, therefore all mail should be fully prepaid with 8 cents for the 1st zone, 16 cents for the 2nd zone, and 24 cents for the 3rd zone for each ounce or fraction of an ounce. Such postage includes the transportation of the mail to and from the government-operated air mail routes except where connection is made by contract air mail service.

The Overnight (New York-Chicago) Route

The rate of postage on mail carried on the New York and Chicago overnight government-operated route is 10 cents for each ounce or fraction of an ounce, except where connection is made via a contract air mail route.

#### Contract Air Mail Routes

The rates of postage on mail carried on contract air mail routes is 10 cents for each ounce or fraction thereof on each route or part thereof not exceeding 1,000 miles in length; 15 cents for each ounce or fraction thereof on each route or part thereof exceeding 1,000 miles and not exceeding 1,500 miles in length; and 20 cents for each ounce or fraction thereof on each route or part thereof over 1,500 miles in length, direct air mileage to control in each case, with 5 cents for each ounce or fraction of an ounce additional for the government-operated air mail routes. Such postage includes any necessary transportation to and from the air mail routes.

#### LIGHTING FOR NIGHT FLYING

(Concluded from page 89)

can be accurately determined.

Along the airway and in between the 24-inch revolving beacons, flashing gas beacons are used at 3-mile intervals. They have proven to be of the greatest assistance to a pilot when the visibility is poor, and it seems likely that it will develop that a small flashing beacon, which is automatic in its operation, will be used at even more frequent intervals along the airway, for when the visibility is bad the only direction a pilot can see is straight down. It seems obvious that the more lights you can have directly beneath a plane in the air, the better the percentage of performance will be and the hazard considerably reduced.

Where emergency fields are located in remote districts and electric power is not available, small farm lighting plants generating about 1,500 watts are used to supply current to the 24-inch revolving beacon, illuminated wind direction cones, etc. However, it seems likely that the development of air transportation at night will soon warrant running power, telephone and telegraph lines along the course of the airway, very similar to the methods used by railroads in handling their communications and signals. Such a power line would allow the placing of inexpensive and practically automatic beacons at any desired interval.

When we stop to consider the comprehensive facilities used by the railroads, with their expensively prepared roadbeds, bridges, tunnels, etc., with signal lights to control and safeguard their rolling stock practically every mile, with power, telephone and telegraph lines along their course, with dispatchers stationed at quite frequent intervals, with their shops, round-houses, yards, sidings, etc., at fairly frequent intervals, it seems reasonable to expect that the equivalent of some of these facilities will be provided for air transportation.

Instead of having dispatchers in the same sense that the railroad have them, we will have meteorological stations at say 50-mile intervals along the airway, with equipment for signaling to the pilot passing over as to whether the next 50-mile interval is clear and whether it is desired for him to proceed or stop at that station.

It must be remembered that night flying is absolutely essential to the successful commercial operation of airplanes and great credit is due to the personnel of the air mail service and to Col. Paul Henderson, whose courage and foresight started the night flying work in the service.

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of Aero Digest, published monthly at New York, N. Y., for April 1, 1926. State of New York,
County of New York,
Before me, a Notary Public in and for the State and county aforesaid,
personally appeared Frank A. Tichenor, who, having been duly sworn according to law, deposes and says that he is the Business Manager of the
Aero Digest, and that the following is, to the best of his knowledge and
belief, a true statement of the ownership, management, etc., of the aforesaid publication for the date shown in the above caption, required by the
Act of Congress of August 24, 1912, embodied in section 411, Postal Laws
and Regulations, to wit:

and Regulations, to wit:

1. That the names and addresses of the publisher, editor, managing editor, and business managers are: Publisher, Aeronautical Digest Publishing Corp., 220 West 42nd St., New York, N. Y.; Editor, J. E. Horsfall, 220 West 42nd St., New York, N. W.; Managing Editor, None; Business Manager, Frank A. Tichenor, 220 West 42nd St., New York, N. Y.

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(Signed) FRANK A. TICHENOR, Business Manager.

Sworn to and subscribed before me this First day of April, 1926.

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(Signed) Anna Higgins, Notary Public, New York County, (My Commission expires March 30, 1928.)

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By HARRIS M. HANSHUE

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## AIERO DIGEST

Vol. 9 No. 3

SEPTEMBER, 1926

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Philadelphia—Air Views of the Business Section (above) and the Sesquicentennial Exposition Grounds (below) showing its Location in Relation to the City.



Wide World.

UR expedition left New York April 5th, with a crew of 52 men aboard the S. S. Chantier, the 3500-ton steamer supplied to us by the U. S. Shipping Board. We carried two airplanes, a small Curtiss Oriole, to be used for finding a suitable landing field for our big three-motored Fokker monoplane, the Josephine Ford, which was to carry Commander Byrd and me from Spitzbergen to the North Pole. Our 1500 tons of supplies and equipment was sufficient for a cruise of 10,000

On the morning of April twenty-ninth we sighted Spitz-

bergen and at 4:30 that afternoon entered King's Bay where we were met by Lieutenant Ulling of the Norwegian gunboat *Heimdal*. He piloted the *Chantier* to a berth alongside his ship. We had hoped to find the bay solidly frozen over so that we could tie up the *Chantier* alongside the ice barrier and land the *Josephine Ford* with our supplies and make our attempt from the ice as Amundsen had done last year. But the few small floes were barely large enough to support the weight of a man. The season was the most advanced in years. We had to devise other plans immediately. To have waited for a place alongside the dock would have delayed us too long, as the *Heimdal* would be coaling there for the next four or five days.

A party, composed of Commander Byrd, "Doc" Kinkade, Doctor O'Brien, Peterson, Touchette and I went ashore in search of a landing field and base. A large space between the village of King's Bay and the hangar built for the Amundsen-Ellsworth-Nobile airship Norge, about a mile wide and a mile and one-half long, would

#### By Floyd Bennett

This is the First Exclusive Story by the Pilot of the Josephine Ford on the North Pole Flight



Bennett and Byrd-first to fly over the North Pole.

hope for. One drawback was that it was a one-way field, and we could not take advantage of the wind in getting off and landing. But there was no other place in the vicinity. Our next problem was to get our equipment ashore. The snow was coming down fast and the bay was freezing over. It was miserable weather. We worked all night in cold slush and sleet that at times obscured everything more than fifteen feet distant. By morning however, the first load, the

give us a runway for the take off

about 600 yards long; it was

down grade 5 per cent and as

good a landing place as we could

Oriole, had been taken ashore through gathering ice floes, and greeted the inhabitants when they awoke and came to watch us with curiosity which often developed amusement for us all.

We had chopped a runway through the edge of the ice, cutting it down to the level of the pontoon we constructed so we could haul the planes up to the beach, and on these landed the small plane. The work had nearly exhausted the men, so we returned to the ship to sleep.

On the afternoon of the 30th we hoisted the fuselage of the Josephine Ford out of the hold and lashed it to a raft alongside the ship. A strong wind was blowing and the bay was filled with drifting ice, so we did not then attempt to place the large wing on the fuselage. We were compelled to keep men on the raft to push away floating ice cakes which would have broken the raft. The following morning, May 1st, was perfectly calm, but the bay was packed with drift ice. Conditions were perfect for hoisting out the big wing and placing and securing it on the fuselage. In about an hour we reached the beach.

The first big job of getting the plane on shore was done. Our two wing motors, gas and other supplies remained to be ferried over, but our success in surmounting obstacles in getting the plane ashore made us regard this as a small job. Two more trips with our ferry and we were through.

Our base camp on the shore was then established. Our plane motors were installed and we had the plane ready for the motor test on May 3rd. We were working under difficult conditions. The temperature was 7 degrees (F) below zero and several of the men had frostbitten hands and feet. We had worked almost continuously for three days and greatly needed sleep before attempting our test flight. It was difficult for us to sleep with the constant daylight—one could work until nearly exhausted and still not feel

the need of sleep. It is an odd sensation to wake at midnight and find the sun shining as at noon,

On May 4th we were ready for the first engine test. The difficulty of starting our three Wright "Whirlwind" air-cooled engines in the extreme cold had been anticipated before leaving New York. Therefore, for each motor we made a hood or cover of fireproof canvas which fitted snugly around the motor with a funnel-like extension below the motor. Three gasoline stoves with vertical blow torch burners were placed so the heat would be carried through the canvas ducts to the hoods. The heated air thus circulating around the engines warmed them up in a few minutes. The oil tanks were filled with warm oil. After these preparations the motors started as easily as in a temperate climate,—a tribute to our Flight Engineer, Lt. Noville.



Off on the first test flight.

We were next ready to try the skis. To my knowledge no plane of this size has ever been started on skis, especially with a useful load of 6000 pounds. I had never flown any plane with skis, and had little knowledge as to how the plane would act. A test flight of at least two hours was decided on before the final start, to give us a chance to see how our motors would function under these severe conditions.

Finally all was ready. One motor was opened. Nothing happened! Two motors were opened and still nothing happened. With the third motor wide open our plane did not move an inch! After considerable effort we finally got the plane moving, taxied away up the hill, and turned around for the trial take-off. Again all motors would not start the plane moving and the crew gathered around to give a lift for a start. Touchette, who was standing near,

found a break in the main fitting which secures the landing gear to the fuselage. The ship was strong enough for use with wheels, for which it was designed, but when equipped with skis and either of the wing motors used separately there is a terrific strain on the landing gear, because the skis do not turn on the snow as easily as wheels on the ground. It requires a larger space to turn a plane when equipped with skis. We found that a crew of men could not lift the tail of the plane and turn it, as is usual in turning a ship with wheels. It was by attempting this that we broke the first set of skis and landing fittings. We had come prepared for trouble and had an extra landing gear and two extra sets of skis. But it means time and labor to change them on a plane weighing 4000 pounds and in four feet of light snow. It was necessary to dig down



Exclusive views taken by members of the Byrd Polar Expedition showing the icy wastes at King's Bay and the Chantier's crew.

through the snow in four places and build a foundation of gasoline drums upon which we could place jacks and raise the plane clear of the landing gear. This was a delicate operation as an increase of wind might have forced the plane off the jacks and the expedition would have reached its end. No plane, no flight.

After fifteen hours of hard work we were again ready to attempt the test flight. Lieutenant Parker and I were at the controls of the big plane and Flight Engineer Noville and Mechanician Peterson in the cabin. It was necessary to make a slight turn to the right as we got under way as we had cleared only a narrow runway and there was a snow bank on the left. The plane did not move until all three motors were opened. Then the left ski stuck slightly and the plane headed to the left instead of to the right, which caused the left ski to catch and break in a snow bank just as we had nearly cleared it. The plane whirled around and, as the ski broke, plunged her nose into the snow. This experienced increased our respect for the snow. We were learning.

One ski was ruined, one landing gear strut broken, and other members of the landing gear were badly bent. The

metal propeller of the center motor was out of line and had to be replaced. We were getting quite experienced in jacking up the plane in the snow, but this meant another day's work and delay which was serious. Every day lessened



The ground crew watches hopefully as the Josephine Ford takes off for the North Pole.

our chances should we have to walk back over the polar sea. The sooner we could get away the less fog we would encounter upon our flight, and naturally we hoped to be the first to reach the pole by air.

On May 5th we were ready for another attempt to get off on our test flight. Everything was set, the motors turning up and it seemed as though every possible precaution was taken. The Norge was due the next day and as we were quite close to the entrance of their hangar it would be necessary to move our plane before they could land. Lieutenant Parker and I were in the pilot's cockpit and Lieutenant Noville and Peterson in the cabin. With motors wide open we gained speed as we glided down grade. It looked as though we would make it. Off at last! What a glorious sensation to be in the air after all that work. I wished then that the ship was loaded and headed for the North Pole.

At the end of an hour everything was fine and the motors going great. The temperature and pressures remained constant and everything looked favorable. Suddenly after about an hour and thirty minutes in the air there was an alarming vibration throughout the plane accompanied by a dull hum. The motors were throttled preparatory to landing when it occurred to me what the trouble might be. The plane was equipped with radio and the small electric generator was mounted on the outside of the fuselage just off the cockpit. I looked out just in time to see the generator torn from its mounting. A portion of it went overboard,

the balance hanging on about four feet of wire, Noville and Petersen had seen the generator and by opening a window in the cabin, reached down and pulled it in. We continued our flight for a period of two hours and thirty minutes with no further trouble.

Our first landing on skis was made, which we found not at all difficult, and the plane turned around by hand and headed down grade, where it would start on its historymaking flight.

Final examination of plane and motor showed me we had a leaking oil tank on the starboard motor. This we removed and repaired, and a new radio generator was installed. All that remained for us to do was to load the plane with the fuel and equipment and give the motors a final looking over. Our equipment consisted of about three hundred pounds of food, mostly penmican; two twelve-pound portable rubber boats with paddles; a tent built especially for us; two pairs of snow shoes; a sledge built for us in Spitzbergen; a thirty-caliber Remington rifle and a twelve-gauge shot gun; 300 rounds of rifle ammunition and 200 rounds of shotgun ammunition; an extra parka; two pairs of winter mukluks and two pairs for summer; an

extra pair of reindeer trousers: and a total of 615 gallons o f gasoline and 40 gallons of oil (sufficient for a flight of at least twenty hours), 4 1 0 gallons of this gasoline was in our tanks and 200 in 5gallon cans to be emptied

through a chamois into the main tanks during flight.

The seventh of May was spent in getting the gear stored in the plane. While this was being done, Peterson and Kincaid were carefully inspecting the motors. On May 8th, about 12:30 G. M. T. we were ready for the great adventure. The motors were warmed up and "good byes" were said. I would have preferred to omit the "good byes" as I was not so sure we would get off. The plane was loaded to capacity; our total useful load being 6000 pounds, 500 pounds more than we had taken off with on our test flight at Mitchel Field, New York.

Everything was set to go. Motors opened wide, the plane started slowly down the long runway. We moved along 100 yards before our motors were full out but still I thought we could get off. So we continued down the long runway, our speed gradually increasing until we reached the end of the runway where we had packed the snow. I knew that if we could not clear the snow here there would be no use continuing further, for as soon as we came in contact with the soft snow we would lose speed. At the end of the runway I made a final attempt to get the heavilyladen plane off the snow. It was unsuccessful as we had only about thirty-five miles air speed and it required around forty-five miles to ride with this load. I throttled the motors so as to stop before we reached the open waters of King's Bay, one hundred yards away; when the motors were throttled the plane stopped almost immediately.

(Continued on page 261)

#### THE FORI AIR TOUR

OW it can be told. Men and motors have cooled a bit from the hot rivalry of the second annual Commercial Airplane Reliability Tour for the trophy offered by Edsel B. Ford

and the time is ripe for viewing the great aerial derby in retrospect. It sums up surprisingly well.

This year, at last, the tour got under way from the Ford Airport at Dearborn with the donor of the trophy handling the official starting flag. It held again to the midwest country of its maiden vear, but it undertook a mere ambitious program and it followed that program through to completion. In 1925 the Ford Tour, as flying men insist on calling the greatest contribution made by the Fords to

commercial aviation in spite of the longer and official name, fared badly. His three-motored air freighter crashed on covered a 1,900-mile route and visited eleven cities in a the home stretch of the flight. One of her propellers broke

hectic week of flying. In 1926 it traveled 2,500 miles and stopped at fourteen cities, spending two weeks enroute.

Consequently the legs that had to be covered daily were shorter and there were more lay-over periods in which the personnel of the flight—to say nothing of the flying campfollowers—had a chance to rest up or enjoy themselves. It was no fault of the management that there was very little resting.

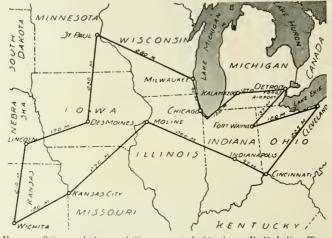
Seventeen airplanes of various types started the cross-country swing from Detwoit last September 28 and fifteen of them fought their way back through a terrific storm to Henry Ford's airdrome one week and one day afterward. Twenty-five machines were in the race when the tour began this year and twenty-one of these returned

the Hotel Statler which took the place of last year's hangar stop had to start fast on the next leg and the rivalry was

feast at the Ford Airport.

The 1925 tour was "won" by Eddie Hamilton, pilot of the Ford-Stout allmetal mono-plane, at an average speed of 101.05 miles an hour for the entire course. It was little more than a pioneer-

As Related to C B Allen By the Tourists



Route of Second Annual Commercial Airplane Reliability Tour

ing air carayan, for all planes were rated alike whether they carried much or little in proportion to their horsepower. The tour just completed was as nearly a real contest as the knowledge gained in

1925 could make it. It resolved into a close and hard-fought race in which Walter W. Beech. the winning pilot, sent the Pioneer Travel Air plane, with its 200 horse power Wright Whirlwind motor, over the 2.500-mile course at an average speed of 124 miles an hour. A sister ship of the famous "tin goose" in which Eddie Hamilton last year carried off the laurels for speed did not even place this year among the first eleven planes to figure in the cash prizes of \$20,000

Ford's own entries

and the outboard motor turning it shook itself loose from the plane before C. W. "Shorty" Schroeder could land it. The wing and the fuselage were damaged badly and rough terrain completed the wash-out as Shorty tried to set it down. Fortunately neither he nor any of the other three occupants, including Ernest Greenwood, a special representative of Herbert Hoover who made the tour in the interests of the Department of Commerce, were injured.

Leroy Manning, pilot of the other Ford ship, a single-engined Liberty job, tried to save his employer's colors in a last minute coup. On the flight from Cleveland to Fort Wayne, Ind., the last leg of the tour but one, he "out-smarted" a whole field of planes that were jockeying to be in last at this par-

Edsel B. Ford

to the starting point August 21 in time for the banquet at ticular finish because the last plane to land at each

keen over who would be first in to Detroit.

Manning won but, when he attempted to take off, his wheels mired to the axle. The result was that instead of being first his plane was the last to take the air and the glory of finishing first



The winner-Pioneer Instrument Co.'s Travel Air plane with Wright Whirlwind engine.

was snatched from Manning and even from Beech, the winner, by Charles S. "Casey" Jones, flying his famous old Curtiss Oriole with clipped wings.

The greatest triumph of the tour this year was scored by Wright motors. Five planes entered in the air derby were driven by the dependable aircooled Whirlwinds and three of these took first, second and third places in the scorer's book. One other, the Ryan monoplane, finished eighth and the other was the tri-motored Ford. That these engines drove the three leading planes in the tour was emphasized by Edsel Ford in the following words:

"It is as logical to have an air-cooled motor in an airplane as it is to have a water-cooled motor in a motorboat."

Several elements contributed to the remarkable record made by Walter Beech in winning the tour. First, and most important, was his motor-an aircooled Wright Whirlwind. Second was his cleanly-designed Travel Air plane. Third was the pilot himself,

no small factor in any flight but particularly potent in this case because Beech was playing on his home grounds. He



William A. Mara and Eddie Stinson, who came in 3rd in the Detroiter.

passed familiar landmarks. But he had rivals nearly as well equipped in a 11 these respects as he himself. Beech's own opinion is that navigation won the race for him. The

Travel Air Mfg. Co., to the Pioneer Instrument Co., of Brooklyn, and throughout the tour carried as navigator this

company's vicepresident, Brice Goldsborough.

The plane was fitted with every instrument for air navigation that Goldsborough's company has devised and it enjoyed the further advantage of having the experienced "Goldy" there to



The Edsel B. Ford Reliability Trophy.

covered most of the terrain in the Ford Tour last year and since then has done a lot of flying over the s a m e country. Consequently h e

Travel Air plane No. 2 in which he flew was sold by Beech, of the

manipulate and interpret them. It was a fortunate combination and, added to Beech's flying skill, resulted in the Pioneer plane hitting every control stop "on the nose" regardless of weather or visibility.

Much of the high speed tucked away by Beech on the long legs of the tour was due to the geometrically accurate course made possible by "Goldy" and his beloved instruments. Again and again the Travel Air machine was the last to leave one control step and the first to arrive at the next, passing all competitors on the way. Through rain and fog, above the clouds and over country where there were no section lines or distinguishable landmarks for miles, the Travel Air forged ahead "as the crow flies."

Pilots with planes not so well equipped had to trust to ordinary compasses, frequently inaccurate, and to maps of the country over which they flew. If a side wind carried them off their course they were not able to know it immediately as was Goldsberough

with his drift angle indicator. Thus Beech was saved many miles. The other planes, between stops, often flew in a

lane fifteen or twenty miles wide and came in for their landings from all points of the cempass. "Goldy" drew a straight line from one city to another on his map and checked on it constantly so that it is doubtful if Beech ever was more than a mile either way off his course.

Louis G. Meister, flying the flame-red B u h l-Verville Airster, also powered with a Whirlwind motor



Brice Goldsborough congratulates Walter Beech, the winning pilot.

but carrying only ballast, gave Beech a run for his money throughout the trip and finished second at Detroit close on

the winner's heels in the matter of points. Meister's plane carried a heavier load than the Travel Air and as a consequence Walter forced to outstrip the other in speed to keep ahead in the scoring.

"Eddie" Stin-



The Buhl-Verville "Airster" (Wright Whirlwind engine) which scored second place.



Jack Laass and the tiny Driggs "Dart' under the wing of the Ford transport.

The route followed by the seco n d Reliability Tour was from Detroit to Kalamazoo. to Chicago, to St Paul, thence south to Des Moines and west to Lincoln before turning south 210 miles to Wichita. Here the flight doubled back to the



The Ford three-engine monoplane.

northeast through Kansas City and Moline, then southeast to Indianapolis and Cincinnati where it swung northward again to Cleveland whence it zig-zagged home via Fort Wayne. Plans already are under way, according to H. G. McCarroll, of the Detroit Board of Commerce, who acted as tour manager, to bring the Reliability Tour east in 1927 The tentative itinerary is Detroit to Cleveland, Pittsburgh, Philadelphia, Baltimore, Washington, Cape May, New York, Providence, Boston, Albany, Buffalo and back to Detroit. Two weeks again will be the time.

Every pilot who completed the tour this year received \$350 expense money. Beech, as winner of the aerial derby, gained temporary possession of the huge silver trophy put up by Mr. Ford and permanent ownership of one leg. To keep it permanently he must score three successive wins. Last year it was said all those who finished the tour were to be counted

"winners" and awarded a leg on the cup. As Beech was among this number he has only to win once more unless this decision has been changed. The cup, it should be said, is not fashioned after a centipede despite the above description and, as a matter of fact, has no legs at all but stands on a circular

Beech's ship piled up a total of 4,043.3 points. In addition to winning a leg on the trophy, Beech received \$2,-500 as the first prize and the additional \$350. Those in the prize money beside Beech were:

son, one of America's few remaining veteran flyers, piloted the Detroiter. a plane of his own design, to third place, flying calmly in the enclosed cabin with white knickers and a straw hat. His performance throughout the tour was a convincing exhibition of the plane's usefulness as a standard commercial airplane.



Second—Louis Meister, Buhl-Verville....3.972.1 \$2,000 Third—Eddie Stinson, Stinson-Detroiter, .2.737.5 1.800 Fourth—I. W. Livingston, Waco 17.....2.672 1.500 1.000 750 Sixth-E. T. Knapp, Waco ............2,287 Seventh-C. G. Clark, Travel Air.....2.230.5 650 Fighth—Vance Breese, Rvan M-I........1.966.3 500 Ninth-R. R. Rolando, Alexander Eagle-400 Tenth-I. G. Ray, Pitcairn Fleetwing....1.779.6 300 Eleventh—C. S. Jones, Curtiss Oriole....1,708 250 The first figures show the number of points scored. The

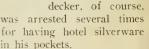
second, the prize money which does not include the \$350 additional expense money.

H. C. Mummert and J. H. Meade, of Hammondsport. N. Y., in the Mercury Arrow, were third in the tour as far as Cleveland. There a rain-softened field and a moment's relaxation of vigilance by Mummert in a "fish-tail" landing washed out the Mercury's undercarriage and sent her over on her back—a total loss so far as the Ford Tour was concerned. Neither Meade nor Mummert was hurt; nor was anyone hurt on the entire tour, seventy pilots and passengers making the entire 2,500 miles without a scratch.

The end of the first day found the fliers in the Windy City receiving medals and kisses from the hands and lips of "Miss Chicago." Several aviators offered to take no medal and two kisses but were overruled by the pretty doner. In Des Moines army tent hospitality near the landing field was offered the tourists but they chose instead to drive into the city. Wichita, Beech's home town, went wild when the air-tanned Walter arrived there first and even got out special editions of the paper in his honor.

In Moline there was a "Quiet Birdmen" dinner with appropriate gifts for the honor guests. Major Schroeder drew an automatic spittoon—one of the kind that gets

where it should be no matter how inaccurate the expectorater may beand Casey Jones received a rubber helmet. It was explained he flies in all sorts of weather and places and needed something of the kind. Boe-



There was some slip-up in the entertainment plans at Cincinnati and the Hotel Sinton management stepped into the breach.

"We believe in the future of aviation," they said, "and would like to do something to help it along. How about letting us entertain the whole crowd?"

How about it? The pilots say that eastern idea for 1927 is O. K. but some way must be found to make Cincinnati one of the stops!





Walter Beech and Brice Goldsborough in the winning plane.

#### THE INK WIRING REPORTER

THE following question was asked:
"How did you like the Second Annual Commercial Airplane Reliability
Tour?"

Major R. W. Schroeder (3-engined Ford

transport):
"We would have done better if Cy Cald-

well had been with us."

Walter Beech (Pioneer Travel Air No. 2):

"Wichita is the eenter of commercial aviation. Why we even have aur plant there." Louie Meister (Buhl Verville No. 1);

"Farmers in Kansas figure that they get forty quarts to the aere. Perhaps this explains why some of the pilots had so many forced landings."

"Casey" Jones (Curtiss Oriole):

"The Manager of the Sherman Hotel in Chieago wanted to know why Jack Frost and myself didn't sign our right names. Can you imagine that?" Dick Depew (Fairchild monoplane): "I can't understand

how these Birds can stay out all night in every town and still eall it an airplane race."

Vance Breese (Ryan M-1):

"We beat Casey Jones into Cleveland, but we aren't bragging about it."

Jack Laass (Driggs Dart):

"Well, I was in at the finish anyhow." Eddie Stinson (Stinson-Detroiter):

"Didn't the Detroiters get second and third money? Just add these two, get the total, and then ask Walter Beech how much he aat. Some brain work."

Brice Goldsborough (Travel Air No. 2):

"We flew in a straight line because that is the shortest distance between drinks."

"Spoons" Boedecker (Wright Aeronautical Field Engineer):

"It was six at one town and a half dozen at another. Soon I will have a camplete silver service."

Harvey Mummert (Mercury Arrow):

"My wife was in Cleveland, do you blame me far stopping there?"

Harold Wymer (Detroit News):

#### By "Dick" Blythe

"As long as Ernest Greenwood was with me I felt perfectly safe until forty miles from Cleveland."

Charles Planck (Detroit Free Press): "What! No women?"

Phillip H. Downes (Woodson No. 14):

"We have rocker arms and valve springs planted in every farm in five states. There should be a good crop of motors next spring." LeRoy Manning (Ford single motor No. 8):

"I got stuck in the mud at Fort Wayne, but I got a medal from Edsel anyway—some team work."

J. G. Ray (Pitcairn Fleetwing):

"Miss Chieago kissed me and pinned a medal on me. Wot a life, wot a Tour, who cares for prize money!"

Mayor Smith of Detroit:

"Ask Bill Mara-he knows."

Bill Mara (Stinson-Detroiter):

"Why ask me, the Mayor is going to make a speech."

H. G. McCarroll (Tour Manager):

"Nero fiddled while Rome burned, so what could I do while the boys painted the towns red? Don't ask me."

Ralph Cram (Davenport Democrat):

"The Tour missed the center of aviation— Davenport—so the 'eenter' went to Moline." Carl Fritsche (Detroit Airport):

"I enjoyed it this year—somebody else did the work."

Frank Bogert (Detroit Times):

"The Tour was one sad sweet song. Somebody Stole My Gal."

Harold Emmons (Lawyer and Sportsman): "Isn't Casey Jones a shrinking violet, so

pensive? Yes, he is."
C. G. Peterson (Wright Aeronautical Cor-

poration):
"Oh, the Tour is all Wright."

Snapshots of some of the pilots and men who helped to make the Ford Tour a success.

(1) Louis Meister (pilot), Buhl-l'erville No. 1. (2) Frank Dorbandt, Phillip H. Downes (pilot) and Dan Stambaugh, Woodsen No. 14. (3) R. R. Rolando (pilot) and J. R. Williams, Alexander Eaglerock No. 6. (4) Ross Smith and J. W. Livingston (pilot), Waco No. 17. (5) Ernest C. Greenwood, special representative of the Dopt, of Commerce, and C. G. Peterson, Wright Aeronoutical Corp. (6) Harvey Mummert (pilot), Mercury Arrow No. 11. (7) J. P. Riddle (pilot), Waco No. 26. (8) J. B. Alexander, general manager Ryan Airlines Ryan M. (9) C. M. Sterling (lilot), Swallaw No. 21. (10) J. G. Ray (pilot) and party, Pitcairn No. 20. (11) "Casey" Jones (pilot), and Jack Frost, Curtiss Oriole. (12) R. Hossler (pilot) and R. Sturtevant, Wocdson.

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#### AIR-HOT AND OTHERWISE

EVERY citizen of the United States in some way must be brought to realize that the development of aviation is something of tremendous import to him as an individual wishing to live prosperously and securely in the greatest country in the

Wings for the Fledgling Progression and Preparedness Real Wings for Uncle Sam

By Frank A. Tichenor

continuous bombardment.

IT is essential that the cities involved should become active in the prosecution of campaigns for the allotment of Government land-

ing fields for aircraft without further delay and the development of these fields, especially their lighting, in the most progressive manner. That city which is without a rightly built and rightly lighted airport when the day of general air development breaks suddenly (as such days always do; progress never seems gradual; humanity always wakes up with surprise to the next step after its accomplishment) will be Out of Luck. Not only will it be hampered for the moment, but it may find the correction of such lack of foresight a startlingly expensive matter.

business as well as bad patriotism and bad common sense.

Fortunately signs indicate that all this is changing, although in the United States alone, among all the countries of the world, young aviation has grim enemies. Such influences were prevented from attacking fledglings in the capitals of Europe because there the people had been taught by terrible experience that air progress is essential to national safety and prosperity. In this important detail they gained because the war was on their own ground (and in their own skies) and we lost because it was (otherwise very fortunately) far from ours.

world. While aviation has grown to strong, mature bird size in other, more progressive nations overseas, it remains

a fledgling on this side of the ocean and that is literally bad

In the United States, unfortunately, immediate self-interest suggests to various powerful groups the thought that air development will hurt them in their pocketbooks. Their torgetfulness of the fact that everybody gains in the long run through anything which benefits the country as a whole, is repetition of the course which similar interests always have followed in America until jolted into wisdom by the swift boot of the popular will properly applied in the right place.

The telegraph companies and railways will fight the air mail in America because they lack the wit to understand that anything which stimulates the nation's business will stimulate their own if they keep step with progress. They fought the telephone by the same token, but the telephone, now wonderfully developed, has not supplanted but has augmented their own efforts. Airplanes will do the same but such matters ever remain dim to the short-sighted.

The steel companies, which have fattened upon contracts for armor plate to protect those battleships which soon inevitably will be virtually supplanted by aircraft, will also fight the development of aviation.

Battleships at ten to fifteen million dollars each of course have been fine fodder for these steel companies, and on such fodder they have waxed exceedingly fat, but an intelligent nation will not continue feeding them with contracts for appliances which science has completely antedated. The sooner this is fully realized the better for the manufacturers of armor plate.

From time to time, whenever, indeed, an opportunity has risen, AERO DIGEST has called public attention to the fact that every bureaucrat and technical officer trained to the old regime and lacking patriotism and progressive-mindedness will strive to fight the coming of any new regime which may displace him from his comfortable, accustomed groove.

But this unintelligence will pass because it must.

THE more progressive business minds of the United States are working in accord with real advance. The Duponts, for example, are said to have developed an explosive of a potential destructiveness so great that, dropped from the air from a single plane, it could do more in an hour to destroy a city than the combined efforts of all the battleships of the world's navies could do between one dawn and another with their greatest guns firing their most powerful projectiles at their best speed in a twenty-four hours'

A UGUST sixteenth, 1926 should be permanently marked with red upon the calendars of this and future generations of the air-minded. On that date two airways were established by President Coolidge under the Air Commerce Act of 1926.

It is now the legal duty of the Secretary of Commerce "to encourage the establishment of airports, civil airways and other navigation facilities" which help your Uncle Samuel get aloft and there work with safety and efficiency.

Further duties of the Secretary of Commerce are to "make recommendations to the Secretary of Agriculture as to a necessary meteorological service," and "to study the possibilities for the development of air commerce and the aeronautical industry and trade in the United States."

Real wings for Uncle Sam! Three cheers!

Under Section Five of this Air Commerce Act, in other words, the President actually has launched Commercial Aviation and now, whenever the heads of the Departments of Commerce and the Post Office agree that the air mail ways with all their facilities, except terminal landing fields and airports, should be used for the development of commercial aviation, these facilities (with the approval of the President) shall be transferred from the jurisdiction of the Post Office to that of the Department of Commerce.

These airways, except airports and terminal landing fields, are to be maintained in fitting condition by the Secretary of Commerce and—and this is most important—all facilities are to be opened under proper regulations and supervision to the public, that is, to private operators.

Operators of airports are directed to provide shelter for visiting airplanes, and to equip themselves with fuel, oil and other supplies for sale.

Thus, by this one act, the two most important airways in the country, that by which the Transcontinental Air Mail already flies and that which links Chicago with the Southwest, are turned over to the Secretary of Commerce, which is to say that they are turned over to the people.

The ultimate and not distant development will be all private operation, under rigid and I pray enlightened Government supervision, of the most competent air transport system in the world, flying daily the greatest number of miles flown by the machines of any nation and creating a public interest so great that the opponents of the nation's air effort will vanish as every aviator has seen mist dissolve before the warm rays of the sun, while competent and progressive men will take their places, or more likely, make new places entirely and occupy them to the glory of the nation and themselves.



Mosaic map of the 12-mile race course showing location of pylons 1, 2 and 3. Photographed by Victor Dallin, Phila.

since 1776, the National Air Races of 1926 will stand out as one of the most important exhibitions of progress.

The races this year extend over a period of seven days—September 4 to 11—instead of the customary three. A number of new events have been added, and the total amount of prize money materially increased. For the first time in National Air Race history the cash prize awards have been limited to civilian events, with the single excep-

tion of the National Guard Race, for the reason that civilian contestants a r e obliged to provide their own planes, equipment and expenses, whereas the Army and Navy participants, using government equipment are not required to do so. Individual trophies for the winning pilots of the Army and Navy events will be given.

our great accomplish-

ments and progress

There are five landing fields available for use: Model Farms Field (3 miles southwest of the Exposition grounds); Municipal Field (adjoins Model Farms Field on the northwest); Mustin Field, Navy Yard (on the shore of the Delaware River, one mile south of the Exposition grounds); Pitcairn Aviation Field (16 miles north of City Hall): Ludington Field, Pine Valley (151/2) miles directly southeast of City Hall).

The "On to the Sesqui" entries will land at Model Farms Field, report and dePitcairn Field, where facilities have been provided for parking and service. Navy aircraft are scheduled to land at Mustin Field, at the Navy Yard on League Island. The field of the Ludington Exhibition Company at Pine Valley is available for emergency use when arriving or departing, or during the week of the races, for reconditioning planes and equipment. The Model Farms Field, from which the race events will be conducted, adjoins the Municipal Field and has been conditioned

especially for the Air Race events this year. "Sesqui Concession" field. located immediately adjacent to the west boundary line of the exposition grounds, is a small one-way field provided solely for a passenger carrying concession, and must not be used by National Air Race participants or visitors. Both the five and twelve-mile race courses and their relation to Model Farms Field are shown in the dia-

vice Ships are to use

The P. R. T. Philadel-phia-Washington airline will provide bus service from the city to the field. There will also be special street car service. Thirty-five acres have been set aside as parking space for motor cars in which the owners may sit and watch the air show.

At the camp site, near Model Farms Field, tents. cots, and blankets will be provided, at a nominal fee, (Continued on page 258)

AT NORTH COLLEGE OF STREET OF STREET



SEARCHING for holes in the sky may seem an idle occupation to some of my readers, who are uninitiated in the difficulties of aerial photography, but in our case, the almost continual presence of a snowy blanket of clouds between us and the ground be-

low proved to be our most perplexing problem. When we found the holes, we were able to accomplish some work. When we did not, it was a day wasted.

The latter part of April, 1925, I received orders to select a competent photographer from my staff and proceed by air to the Blue Ridge Mountains in Virginia and later, to the Great Smoky Mountains in Tennessee and North

Carolina, for the purpose of photographing two vast areas which the government contemplates converting into National Parks. Maps were furnished showing the approximate limits of the proposed tracts and my first task was to locate suitable landing fields. suitable. I mean fields on which one can take off and land day after day without danger of wrecking the airplane; also they must be close to the territory to be mapped so as not to use too large a supply of expensive gasoline on the way to work. The fields must be close to a road over which heavy trucks may go with their load of gasoline and oil day after day. (On the Great Smoky job alone 2,222 gallons of high test gasoline were used.) Lastly, permission to use the fields had to be obtained from their owners. I may say here that the last mentioned turned out to be the easiest task of all, for we were greeted with true Southern hospitality everywhere we landed. In fact, the only serious

Photographing the Great Smoky and Blue Ridge Mountains

Ву

#### Lieutenant C. L. Williams

Photographs Courtesy of U. S. Army Air Corps

ground was after heavy rains or heavy snow had made the roads impossible. Staff Sergeant Jesse J. Barn-

trouble experienced on the

Staff Sergeant Jesse J. Barnhill took the pictures in Virginia. Although I had expected him to accompany me throughout the trip, he pre-

sented another of my unforeseen difficulties in the form of a charming bride from Staunton, so I took Staff Sergeant Sam Houston on the work in Tennessee-North Carolina. To these men goes a large part of the credit for the successful completion of the project.

It was decided at the start that the photographs be taken from an altitude of 15,000 feet above sea level for several

reasons. (The majority of the accompanying photographs were taken at very low altitudes for use in identifying the location of prints from 15,000 feet in the completed mosaic.) It is essential in taking vertical pictures (i. e. through a hole in the bottom of the plane) that the ship and camera be perfectly steady, and the higher you go the less tendency there is for "bumpiness" in the air. Another important consideration is that the greater the altitude, the larger the area covered in each photograph and, consequently, the fewer the pictures needed. The principal reason, however, is the fact that photographs from that elevation, with the camera we used, have an easy working scale of 1 inch on the picture equal to 15,000 inches on the map.

Over 4,000 exposures were made, each of which had to be carefully developed, catalogued and printed. Taking pictures from an altitude of 15,000 feet is quite obviously'a matter of visibility. That's why we sought holes in the sky.



Lieutenant C. L. (Billy) Williams



Air Views of the Great Smoky Mountains and the Shenandoah National Park.

(Top) Mountain tops near Woynesboro, Virginia, Note the cloud shadows.
Looking eastward towards Simmons Gap, Blue Ridge Mountains, Virginio,
4 forest fire near Almo, Virginio, viewed from an altitude of 8,000 feet.
Looking down from above the timber line, Shenandoah National Park.

(Top) A beautiful estate just outside the Shenandoah N

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(Top) A beautiful estate just outside the Shenandooh National Pork. The junction of South and Middle Rivers, Virginia, from 5,000 feet, 11,000 feet above Grindstone Mountain, Virginia, looking scuthwest. A view straight down from 5,000 feet on Great Smoky National Pork.

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#### AIR MAIL RATES MUST COME DOWN

HE words with which this paragraph is headed should become a general slogan among American business men. The regular postage rates as charged by other services should be at once established for at least first class and probably all classes of air mail service. Suppose at first this did not pay. What of it? Many rail and water mail routes do not pay. Stage routes almost never pay.

The planes now in service at very slight additional expense could transport upon every trip many times the weight of mail they now can find to carry. Increase in fuel costs would be slight, increase in depreciation would be slight, no increase would occur in the cost of personnel, 10ute-lighting or a dozen other things.

What many seem to forget in connection with air mail is what everyone remembers in connection with mail service by old media. It is a part of the life of the people.

On some routes even now there are no deficits. Where deficits occur remedies are possible. No route exists which does not cover large cities full of progressive business men who are anxious for swift regional advancement and willing to pay something for it. Almost every one of these men would pledge himself to spend habitually a certain specific sum on air mail service if properly solicited. If each agreed

to use air mail to the extent of \$1 a day only, the increase of business would be tremendous. And business men who began to do this because they wished to help national progress would keep on doing it because they had found it profitable. The folk to whom they wrote by air mail would reply by the same medium. It would be a general education and a general gain. Speed never has been and never can be waste in the transaction of American business.

The forces in opposition to the development of air mail might as well cease now all efforts to obstruct or stop its growth. even the device of keeping up the rates will do that, although it will hamper and rob the taxpayers of the advantages for which they must pay in any event. Probably the stage drivers wept when the first transcontinental mail train puffed across the continent.

but they were patriots enough to cheer also. Use of the air mail scarcely will pay a bank in actual interest saving upon small transactions. But banks would use air mail exclusively if the air mail postage rates were low and the mere fact that they did so would thrust the energy of a new pump behind the financial impulse of the nation. Universal bank use of air mail wherever possible would speed up all long distance business in this nation as if a dose of magic dope had been thrust into its veins. Even if the banks could not prove profit in that penny-counting which is the means by which they must make a living, the general business-world, which, in America, counts hundreds, thousands and millions instead of pennies, very soon would feel the stimulation.

So, looking at the thing from these and many other angles which there is not space to enter into here, we come back to the phrase with which we started: "Air Mail Rates Must Come Down."

#### THE GUGGENHEIM FUND

HE mere fact that the interest of such a practical and successful American, Daniel Guggenheim, has been aroused by aviation sufficiently to make him willing to become its special patron should be a stimulant to those already interested in the industry which has accepted the sacred trust of developing in the United States the art born of the genius of those great Americans, the Wrights.

The two gifts of the Daniel Guggenheim Fund, \$300,000 to the California Institute of Technology and a like sum to Leland Stanford University, will be of vast import to the In the California Institute of Technology, the Daniel Guggenheim Graduate School of Aeronautics will be housed in a new Aeronautics Building containing a ten-foot high-speed wind-tunnel and the courses will include practice as well as theory worked out by the best experts in the country with, also, a comprehensive program of research.

Wind-tunnel models also will be built and tested and full size experimental gliders and power planes will be constructed. The facilities of the Douglas Airplane Company at Santa Monica will be at the disposition of the Institute. and it is felt that thus will be established in the highly favorable environment of Southern California a cen-

ter of aeronautical interest. Mr. Guggenheim established the Daniel Guggenheim Fund last February, proposing to supply \$2,-500,000 as needed for experimentation and development of aeronautics during the infancy of the art as a civil enterprise. This followed his establishment last year of the School of Aeronautics at New York University with a principal fund of \$500,000. Guggenheim now performs the wonderful national service of matching in the West the splendid service he began in the East.



NOW THEY CAN FLY!

#### A NOD AND A WINK

THAT annual aeronautic deficit called the National Air Races is upon us. This year Philadelphia has come out of its coma and elected itself to the position of lossholder, or Goat. Philadelphia, the home of the Quakers, is the city where "Sleep, Baby, Sleep," and "Don't Wake Me Up, I Am Dreaming" were written. I'm surprised at the Quakers wishing these races upon themselves,

because until now they have been considered very careful spenders. They're the only people in the world who can buy something from a Jew and sell it to a Scotchman at a

profit.

As a sizable percentage of the country's population is trying to worm a way through Philadelphia's dreamy lanes to the Sesquicentennial, better known as Mayor Kendrick's Karnival, and that will be known later as Vare's Real Estate Development, the Quakers may break even on this yearly Air Insolvency. If anyone can do it, the Quakers can. But they may not. Perhaps there aren't enough people in the world willing to pay admission to the air races to pile up a profit. There never have been yet. There might have been enough if all spectators had paid to get in. But most of them seemed to have arm bands or passes.

This annual deficit has set me thinking, and the amazing outcome of this unwonted effort is that I have found an answer to the heretofore baffling query, "How can the

deficit be removed from the Air Races?"

It can be removed by the simple expedient of making them races in fact, instead of races in name only, as they are at present.

My study of the National Air Races discloses that a race and a deficit are an apparently inseparable pair, like Coolidge and economy, or Mutt and Jeff, or Mary and her little lamb. "Every place the air race went the loss

was sure to go."

Now, before considering a cure, it is necessary to diagnose the ailment, and discover just what is wrong with an air race, and why it is carried on only at a loss to some generous sportsmen. The reason, of course, as even a Naval Bureaucrat could tell you, is that an air race does not draw the crowds, and that consequently the paid admissions do not equal the expenses. And why doesn't it draw the crowds in a country where any other sort of race draws a vast assembly of sporting people? Americans are keen for racing and will travel hundreds of miles to see a horse race or automobile race.

How is it people pay big prices to see horses run 30 miles an hour when you can't get them to pay to see planes fly 300 miles an hour, even when you charge them only a dollar? The answer is that a horse race is worth seeing, while an air race as conductd now is not. If it is argued that there is a romance to the horse as a living creature, while there is no romance in a piece of mechanism, I merely point to the Indianapolis Speedway, where every year a crowd of over 100,000 people pay as high as \$20 a seat to watch an automobile race. And there is no more romance in an automobile than there is in an airplane—perhaps not as much. Nor is it as beautiful, nor anywhere near so fast.

But—and it is a very big BUT—you can see the automobile race and the horse race. And you can't see the air race. Then, in an air race the planes do not start in line as do horses, and race against each other. They merely race against Time—and you can't see Time. The element

The Air Derby By

by baldwell

of competition is lacking entirely. And where there is no visible competition there is no race that the crowd can recognize as such.

Another great difference between airplane racing and horse racing is that at a race track you may visit the paddock and see the horses. But at an air race just try to visit the planes! It can't be done. In all former National Air Races the handling of the crowds has

been turned over to some army unit whose one objective has been to keep people from looking at the planes. At New York this job was given to the Artillery who armed their men with rifles and fixed bayonets. They seemed to be an Anti-Aircraft unit, and succeeded in proving how much the Government wants its citizens to see airplanes. To keep the crowd away from the planes the only thing they didn't use was gas. And this race was sponsored by the civilian National Aeronautic Association! If a man like Billy Mitchell had been president of that association he would have pulled those guards off in one second. This is not written in any spirit of soreheadedness over any treatment that I personally received, for I had an arm band and could go anywhere. But the crowd who paid admission and made the race possible were herded behind ropes, without any chance to see the planes nearby, and were kept there by soldiers with fixed bayonets. At Philadelphia this year civilians are in control. They were afraid that if they turned it over to the Army that the Chemical Warfare Department might be placed in charge and kill off the spectators before they had spent their money at the 'hot dog' stands.

There is something radically wrong with the way air races are handled if they do not attract a crowd in a country where a horse race plays to an attendance that is limited only by the capacity of the grandstands and field to hold them. If it is argued that there is betting on the horse race and none on the air race, the obvious answer is that there is no betting on the automobile race either. I mean no official betting, of course. One may bet privately on either automobile or air races, and many people do so.

What must we do if wealthy sportsmen are not to be called upon to make up a deficit, as they have done in former years? Is Hoyt to be asked again to chip in \$25,000? And am I again going to be asked to contribute another 50 cents? The very thought makes me shudder. No! A dozen times No! Non! Nein! Nix! And I wish I knew some more languages to say "No" in.

What must we do to avoid this catastrophy—the only trophy air race backers ever get? We must make the thing attractive to Pro Bono Publico. And the more bono they are the more of the publico will be attracted. We must put on air races that can be seen as well as heard.

The course should not be more than five miles around, and the machines must be in view of the victim—the spectator, rather—who has paid to see them, for at least one third of the course. One pylon should be immediately in front of one end of the line of spectators, and another pylon at the other end of the line, say a mile if it is a big field, with the finish line half-way between these two pylons. Two miles directly away from the spectators should be the third pylon, about which the planes make almost a complete turn. That makes a five-mile triangular course with all planes in sight most of the time, and something in sight all the time.

(Continued on page 263)

#### LINKING THE AMERICAS BY AIR

In the Department of Commerce report on trade with Latin America, it is surprising to learn the increase for the present year to the astonishing figure of

\$2,000,000,000. This is three times as much as in prewar years, and is fully 18 per cent of the total foreign trade of the United States. Here is food for thought.

Of all the weapons of war and instruments of peace, aeronautics and radio rank the highest. These elements are rapidly shrinking the world and bringing more understanding, sincerity and solidarity to our continent.

Latin Americans differ from the North Americans in commercial traits, ethics, religion and psychology. But we think of each other as bandits or "Shylocks" is a wrong which interchange of intelligence through radio and air transportation will quickly correct.

Disregarding the conventional geographic division of the earth into five continents, we see at first glance on a map of the world that Europe, Asia and Africa form one solid mass of land and America forms another. The commercial aircraft problems of the two hemispheres are decidedly dissimilar. There, five powerful nations and two smaller ones are desperately fighting for air supremacy—England, France, Germany, Italy, Russia and Belgium and Holland. The problems, therefore, are multiplied. Here there are no rivalries and no conflicting interests. Latin America is engaged in the production of raw materials, for her best customer, the United States. At the same time she is the best customer of the manufactured products of the United States,

No other part of the world has the advantages for air transportation as our continent. We have an immense

area which is sparsely populated. Natural barriers for surface transportation, such as mountains, deserts and jungles, abound in Latin America. The heat of the tropical low lands has confined the bulk of our population to high plateaus where the climate is healthy. Our economic centers are therefore separated by long distances with natural barriers for railroads and highways. Consequently air transportation will have no inland competition. Moreover, land is so cheap that practically free emergency landing fields could be obtained every 10 or 20 miles along the routes, thus increasing the safety factor.

In America are a

By Colonel Juan F. Azcárate

Mexican Air Service

group of friendly countries very large in area, speaking practically two languages. In Europe several languages are spoken in a small area, and the short distances between in-

ternational frontiers, combined with the sharp competition of express trains are the main handicaps to air transportation.

South of the Rio Grande, from 32°35′ latitude North to the southernmost part of the American continent, including the West Indies, twenty republics are steadily rising to wealth and power. That is Latin America—immense, fantastic. It has three things in common with the United States—republican government, social equality and political separation from European affairs. Yet through our peculiar topography, presenting barriers to surface transportation, the density of population has been held down to 4.4 to the square kilometer.

Slow communication accounts for the slow formation of public opinion, thus giving place to conflicts between old and new ideas. The officials of far districts of central governments cannot be supervised and directed easily. Revolutions spread before they can be opposed because information is sent to the central governments by slow, defective means. Fighting this evil will be another benefit of commercial air lines.

Due to the dependence of man on transportation, most of the economic centers are located along the coast. The development of our natural inland resources therefore had to be postponed for a future era of better transportation than railways and motor highways—the air era.

Taking as a criterion the volume of commerce between the different points, the location of the main international

air lines on the American continent may be predicted. (See the accompanying map.)

It is obvious that this line will form a loop around South America so as to touch the capitals and large economic centers of all the countries—except the rather unimportant capitals, La Paz in Bolivia, and Asunción in Paraguay. These are inland but may be connected to the main line by feeder lines.

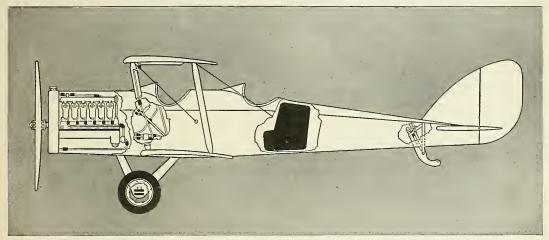
For economic reasons the line will split in northern South America, so as to touch those important commercial zones of the Caribbean Sea—the Republics of the West Indies, and those

(Concluded on p. 267)





#### GOODYEAR PROVIDES THE RUBBER



BLACK areas show where rubber is used in airplane construction. Goodyear makes hose and molded rubber connections; tires, tubes and flaps; streamline windshields; fuel tank covers; tail skid and axle bumpers; grommets; rubber floor matting

PLAWLESS metal . . . true wood . . . stout fabric . . . and good rubber! These make the airplane.

Rubber tires, of course. As big as they must be. As small as possible to reduce resistance. Tough, yet light. Able to take the terrific smash of fast, or awkward landing. Able to roll to the takeoff over soft or bumpy ground. Not just tires, but airplane tires.

Fuel tank covers, too, that prevents plash or spray, even though the container be battered, broken, or pierced. A perfect bandage of soft, live rubber that protects against condensation, as well as accident.

Rubber washers, rubber grommets, rubber hose—to resist wear, absorb vibration, defy corrosion, or withstand extreme temperatures.

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Aeronautics Department

THE GOODYEAR TIRE & RUBBER COMPANY, INC., AKRON, OHIO



AVIATION EQUIPMENT

drome. All flying units stationed at

outlying stations have been with-

#### THE IRISH AIR FORCE

THE Ministry of Defence of the Irish Provisional Government took over the organization and administration of the Defence Forces of An Saorstat im-

Defence Forces of An Saorstat immediately after the signing of the Anglo-Irish Treaty in December, 1921. Departments of both Civil and Military Aviation were immediately set up under two separate directors, responsible to the Minister for Defence, through the Chief of General Staff, for the control of aviation in An Saorstat. Schemes for the organization and administration of civil and military aviation were drawn up, submitted and passed, but, due to the outbreak of Civil War in June, 1922, it was found necessary to abandon temporarily the civil aviation scheme and to concentrate on the immediate establishment of an Army Air Corps.

The Army Air Corps took over from the evacuating British Forces, the aerodromes, workshops, etc., previously occupied by the Royal Air Force. The services of a number of qualified Irish pilots and aero mechanics were procured, and a number of machines of the general purposes, light day bomber, and single-seater scout types were obtained, in addition to a flight of Avro machines for training purposes. An active Service Unit was immediately placed in the field which did some very valuable work in coöperation with the ground forces. The chief work of this unit was reconnaissance, contact patrol, train escort duty, and the distribution of propaganda and annesty circulars over the Cork and Kerry Mountains.

Due to the unsettled state of the country and the fact that most of the qualified flying personnel were fully employed with the Active Service Unit, very little progress was made on the training side. On the cessation of hostilities, however, a School of Aeronautics was established, and the training of personnel was seriously undertaken. During the past two years very great progress has been made in training the personnel of the Army Air Corps.

Aviation came into being in An Saorstat at very critical time. and the Air Force maintained to date can only be regarded in the light of a nucleus force, merely sufficient to meet the immediate Army requirements and the training of the personnel for future civil and military aviation developments.

The Army Air Corps, which is commanded by Colonel C. F. Russell, assisted by Commandant J. C. Fitzmaurice, has its head quarters at Baldonnell Aero-

#### By James C. Fitzmaurice

Commandant, Army Air Corps of Ireland

Thaurice drawn to Baldonnell to concentrate on training, pending the re-organization of the corps.

In addition to the training of personnel during the past or years, a considerable amount of very valuable aerial optographic work has been done in connection with sur-

In addition to the training of personnel during the past two years, a considerable amount of very valuable aerial photographic work has been done in connection with survey and archaeological research. At the moment an aerial survey of Dublin is in hand, and very satisfactory progress is being made.

The total machine strength of the corps numbers 30 machines of the following types: 6 De Havilland 9's, 9 Bristol fighters, 4 Martinsyde scouts, 6 Avro 504K's, 4 De Havilland 60's (Moths) and I Martinsyde passenger.

The following aerodromes are being maintained, although Baldonnell is the only one occupied at the moment: Baldonnell, Co. Dublin; Fermoy, Co. Cork; Oranmore, Co. Galway; Tallaght, Co. Dublin; Collinstown, Co. Dublin; Gormanstown, Co. Meath.

An Saorstat is a contracting State to the International Commission for Air Navigation, and although civil aviation has not yet started in the country, all facilities are available to deal with commercial aircraft. Baldonneil Aerodrome is the Customs aerodrome for all aircraft entering or leaving An Saorstat.

As already explained, the attempts to develop civil aviation in 1921 had to be temporarily abandoned owing to the Civil War early in 1922. A committee, representative of the Ministries of Industry and Commerce, Posts and Telegraphs, and Defence, is, however, now considering the possibilities of civil aviation in An Saorstat, and the administrative policy to be adopted for its control.

An Irish Aero Club was formed in Dublin early in the year, and commenced the flying training of its members on light aeroplanes during this summer.

Until this year, however, little interest has been shown by

the people of Ireland in commerc i a 1 aviation. There were two light plane clubs in Northern Ireland, but before the inception of the Irish Aero Club there was no organized body to conduct or promote the development of air commerce, which will be of inestimable value to industrial growth. Yet with her unique geographical position, natural harbors and landing places, Ireland has almost ideal conditions for the expansion and development of her aerial traffic.



Officers of the Irish Air Force and their planes at the Baldonnell Aerodrome.

## Another Success for Napiers

TPO discover the best German seaplane a competition has been held in Germany recently.

This Competition proved so strenuous both from a reliability and seaworthyness point of view, that of the seventeen machines entered, only three finished.

A Heinkel seaplane, fitted with the only British NAPIER Lion engine in the competition, won First Prize, being the only machine and engine to complete the severe trials without any repair or penalty mark.

> For all purposes in all climates install the British-built water-cooled

## NAPIER

The finest aero engine in the World

#### OTHER NAPIER ACHIEVEMENTS IN 1926

Cairo to Cape Town and back to England by four Royal Air Force Fairey machines Total engine miles 56,000 Plymouth to Alexandria and back by two twin-engined Royal Air Force Supermarine flying boats

Spain to Buenos Aires by twinengined Dornier flying boat flown by Major Franco 12,518

27,600

All these flights were accomplished free of any engine trouble.

> D. NAPIER & SON LTD. Acton, London, W.3

#### NEWS OF THE N.A.A.

A S I write the delegates are gathering in Philadelphia for what, if they so decide, may be made the greatest constructive effort ever made in the United States toward the furtherance of aeronautics. If they determine otherwise this effort may become

the most destructive. It is for the delegates to choose; therefore on their determination hangs the fate of American aeronautics for the time.

This being the case Aero Digest's suggestion to the airminded of the country is a season of prayer that those delegates when they begin to work may select as President and other officers of the organization men of experience, vision, practical common-sense and unselfish enthusiasm, untainted by fads, foibles or toadyism, and choose as an Executive Committee men who will outline for the body such a comprehensive program as will combine all those interested in aeronautics into a real national effort.

If this is done when the next convention comes together in 1927, whether on the Pacific Coast, the borders of the Gulf of Mexico, or at the North Pole, the accomplishments of this year and the plans formulated will have so stirred general interest during the intervening twelve months that everyone will want to be there.

Replies to a questionnaire sent out by this publication to members of the various chapters have brought replies indicating that many of these bodies propose to send no delegates to the convention. This is tragic. But the reason is succinctly stated by the query, "What's the use?" And who can blame them?

That such indifference or distrust should be a general mental attitude is one of the saddest things imaginable and auguring very ill for the future of that art and industry which now comes nearer than any others to being of paramount influence upon the future of the nation.

There can be but one deduction and that is that the N. A. A. as at present constituted will not do. Left alone it will vanish from the surface of the earth, as from the airways high and low which are above the earth. It must be revamped to meet the new conditions which have come into being since its birth.

In aeronautics more has happened in the last two years than had happened in the previous twenty, not even failing to take into account the tremendous effect of the World War on aviation. This must be recognized and proceedings must be formulated in accordance with the fact.

One of the first things to be done at the Philadelphia meeting should be the reduction of the membership fee to one dollar. For 1926-1927 the organization's objective should be 100,000 members and the lower fee obviously is the first step in that desirable direction.

Every member of every aviation club in the United States, as well as every person associated with every other group in any way interested in air development, whether professionally or as an amateur, should be a member of the N. A. A., and this can be brought about only if the organization is transformed at this next meeting from backyard clothes-line wire non-conductivity into live-wire vitality.

No good reason exists why every city of importance and even hundreds of small communities in the United States

Be Big and Win Be Small and Lose

By Frank A. Tichenor should not each be in the immediate future the location of an organized group of the air-minded, functioning independently as a social body, but as far as aeronautics in its national aspects is concerned affiliated with and giving splendid strength to the N. A. A. If all

those which now are in existence were so affiliated, the N. A. A. would be worth while; they might have been and can be; and to their number can be added hundreds more at present utterly unthought of because nobody has taken any trouble to spread the general idea.

That the N. A. A. should be a part of every intelligent American's patriotism is an axiom. If it were realized the N. A. A. automatically would become a vast national body in which representation would be in accordance strictly with membership numbers in local organizations.

The Executive Committee, meeting as occasion may require, should and easily can be made up of those sufficiently interested to make them demand a patriotic and wideminded national air development.

Every chapter and every club in the United States should have a junior organization fathered, sponsored and advised by it, and thus sure to provide, as the years pass, new and informed material for the parent body sufficient in strength to make certain that that body at all future times shall be strong enough to cope with those who attempt to hold back commercial aviation, fearing that if it grows the people of the nation, bill-payers for whatever may be done, may ask why military and naval aviation does not develop also.

This query asked persistently would abolish the soft snap, humble the haughtiness of the brass button and cocked hat, and make aviation what it should be, a national enterprise to be conducted by and offering rewards to only those who work and worry for its constant betterment as Americans have worked and worried for the betterment and progression of other great ideas, such as railways, telegraphs and telephones.

Heavy as lead in bureaucratic mind and consciences rests the knowledge that when commercial aviation grows and shows its wonder-possibilities in the United States the people of the country will sternly ask the desk-generals and chair-admirals in Washington why they have betrayed the trust imposed on and accepted by them of developing military and naval aviation.

The sooner this earthquake is recorded by the seismographs of the Naval Observatory down in Washington the better it will be for Uncle Sam and all his children, and right action at the N. A. A. Philadelphia Convention would tend more than any other thing immediately possible to hasten that glad day.

These, very briefly stated, are some of the good reasons why this publication appeals as strongly as may be to the delegates who now are gathering at Philadelphia to set aside all selfishness, to forget all petty politics and to get together for the best interests of the whole nation. Such a course and only such a course will lead them on to glory and to profit. That it will also be the patriot's course will appeal to and effectively influence every individual concerned if he only stops to give the matter thought.

It is a case of be big and win, be small and lose.



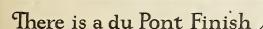


## In a test of reliability a Buhl-Verville , , , finished with DUCO

SUBJECTED to the careful, critical scrutiny of experienced judges, the Buhl-Verville plane, number one, earned for itself a place of honor in the Ford Reliability Tour—a rigid test of a plane's ability and flying fitness. Like others among its strongest rivals—it is finished completely with Duco.

Duco is one of the many du Pont products scientifically adapted to aircraft use. There is a du Pont product for every part of an airplane—wing dope, paint, varnish and Duco.

The Buhl-Verville is powered with a 200 h.p. Wright Whirlwind Motor.



#### for every Aircraft Need//

The advice of the du Pont Industrial Finishing Service is freely offered for help on your own particular needs. Write us about your finishing problems. Address: E. I. du Pont de Nemours & Co., Inc., Chemical Products Division, Parlin, N. J., Detroit, Mich., Chicago, Ill., San Francisco, Cal., Everett, Mass., or Flint Paint & Varnish Limited, Toronto, Canada.

(TUPP UD)

Say you saw it in AERO DIGEST

He lands at Charing Cross feeling

like the prodigal son, and blows

up to the Air Ministry expecting at least that they would be less

#### THE YARNS OF "HELL'S BELLS"

NE way of getting out of the War," says "Hell's Bells" O'Neil.

Golf at the Air Ministry By James Warner Bellah

"was to land on a Hun aerodrome

and get taken prisoner. Of course, you burned your machine with the flare provided for such purposes, and after that no one could tell whether you had trouble with the engine or cold feet. Another way was to get transferred to duty at the Air Ministry. There wasn't so much doubt in that case. I've got no quarrel to pick with some of the Bolo Boys for they had copped a fair blistering of wounds and deserved a rest. By the same token, there were some who were just plain yellow. Take it or leave it-you know my address, and there are a few pilots left who'll back it with me.

"Jack Delaney is one of them. Jack had a way with a Vickers that was cute. Let him get a bus in the outer circle of his ring sight and the bus got hit-right through the pilot's seat. But Jack wasn't so clever as a pilot. He could fly, of course, but he was a bit sloppy and slow-if

vou follow me.

"One day he got caught properly at sixteen thousand. He burned one Hun but three more dropped on him and shot him twice through the left arm and tore up the calf of his leg. He must've fainted for a moment-which probably saved his life-for he flopped and staggered down in a falling leaf. Mac Pherson went after him and scattered the Huns, but Jack was gone. At least we thought he was. But Mac followed on and saw him snub into a Hun 'drome and land on one wing and his nose. It comforted us somewhat, but we never got the whole story until Jack came back six months later.

"He wasn't hurt in the landing and, after the Jerry M. O. had fixed his arm and leg up somewhat, the Hun squadron gave him the courtesy of their mess and got him properly drunk, as we all used to do, to see whether or not he'd spill

some dope that their Intelligence could work on. had a hell of a fine time for three days, but he wouldn't talk, so they sent him back presently to Lazeret VI in Cologne. He was there until he healed up, then they sent him to Mainz. I don't remember the name of the camp he got away from, but three of them pulled loose one night and started for Holland. You've all read Pat O'Brien's stuff. It was a long, hard pull and one of them got drilled, but Jack and the other made the frontier and got across.

"In Rotterdam, Jack met some friends who gave him a misfit outfit of mismatched mufti and smuggled him off to England on a tramp steamer. He had no money nor clothes and he was still gazetted as a prisoner of war.

unmannerly than usual and would give him some back pay and a new uniform allowance and a couple of weeks' leave. "The Information Desk sends him to twenty or thirty wrong rooms in different parts of the Cecil until finally, somewhat footsore, he arrived at the right room. There is a sergeant in the anteroom who stares at him coldly and says something about civilians having to have appointments with Major Ponsonby-Phelps-Corkscrew before they can see him. Jack says he's not a civilian and the sergeant asks for credentials to prove it. Jack has none, of course, so the

sergeant shrugs and prepares to let it go. Jack gets mad.

'Look here, you four-eyed, typewriting wart. Hop in and

tell Major Whatsisname that Lieutenant Delaney-second

lieutenant, mind you-wants to see him.

"The sergeant hops, of course. But he comes out presently and asks Jack if he will wait a few minutes as the Major is engaged. Also, if he will state his business in writing, it will facilitate matters. Jack is so mad he can't think straight, but he puts down 'Business—transportation funds' on the card and sits down to wait. He waits threequarters of an hour, then he sends in another chit, thinking the first has been forgotten. The sergeant says the Major is still engaged. Jack waits another half-hour and another. Finally, after two hours on the bench, the sergeant tells him that Major Ponsonby-Phelps-Whizbang will not be able to see him until after luncheon. At that, Jack goes berserker, having no money to buy his own luncheon in addition to his other troubles. He pushes the sergeant into a waste paper basket and slams open the inner door.

"There is a wingless Major and a wingless Colonel swinging golf clubs at rolled up bits of paper on the carpet. Jack doesn't understand the new Air Force uniform

they've got on, which looks more or less like the Polish Army beside the old R. F. C. outfit, but he does understand that these two birds are healthy, have no wound stripes nor any other kind of war advertising. The Major stares at him.

"Well, sir, and who are

"Jack splutters and froths at the mouth. 'I'm Second Lieutenant Delaney of the Blink Blank Squadron-reporting in from Germany.'

"'Germany?' says the Ma-jor, 'Where is your uniform? And what do you mean by pushing into this office without being announced?'

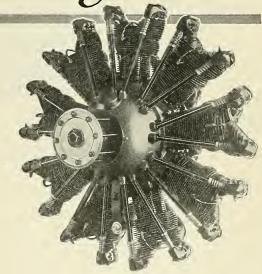
"Jack goes completely crazy. He levels his finger at the Ground Hog and yells at him, 'Listen to me, you (Continued on page 267)

"I've killed a few men in my life, and so help me God, I'll smash this through your rotten skull if you don't sit down at that desk and write me out the necessary forms."

## Air Cooled Fighters

"Wasp" leadership, established through improvement in basic design, has resulted in a new and broader application for radial air cooled engines.

These unusual qualities coupled with Pratt & Whitney's unexcelled workmanship make for the fine performance and dependability so vital in both military and commercial flying.



THE WASP 425 H.P. at 1900 R.P.M. Weight 650 lbs.

Wasp Engines are now flying in these Navy

Fighters



THE CURTISS HAWK



THE BOEING FIGHTER



THE WRIGHT APACHE

PRATT & WHITNEY AIRCRAFT CO.

## WITH the SERVICES

#### NEW DOUGLAS 0-2-Ds FOR AIR CORPS GENERALS

T is fitting and proper that the flying Generals who are in charge of the new Air Corps should have flying equipment, for their personal use, that is both a pleasure to fly and is pleasing in appearance.

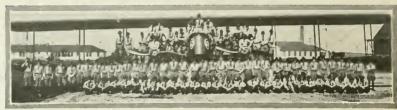
With this thought in mind, the Douglas Company have recently completed two special dual control observation airplanes, one for the personal use of Major General Mason M. Patrick, Chief of the Air Corps, and one for Brigadier General James E. Fechet, Assistant Chief of the Air Corps.

In order to distinguish the Generals' planes from the standard Douglas 0-2 Observation airplanes now in service, the Douglas company departed somewhat from the standard Air Corps color scheme for the finish on these two special airplanes. The fuselage, wheel disks, engine and cockpit cowling are finished in a very beautiful shade of Yale Blue enamel and the wings, tail surfaces, radiator and propeller blades are finished in aluminum lacquer, which makes a very pleasing color combination.

The Air Corps model designation for these airplanes is the Douglas 0-2-D, the D signifying dual control. With but few exceptions these special airplanes are similar to the 35 model 0-2-C planes that are now being delivered to the service and which will have certain improvements and modifications installed as a result of service tests on the 75 0-2 airplanes delivered to the service some time ago.

A few of the modifications and improvements include Standard Steel adjustable blade propellers, new and improved nose type radiator and engine cowling, modified oleo type landing gear, adjustable pilots seats and rudder bars, and the area of the tail surfaces has been increased which improves the general flying qualities of the airplane.

The Air Corps delivery schedule now in effect at the Douglas plant calls for the delivery of all of these new type ships to the service by November of this year.



Underwood & Underwood

West Point Cadets on completion of their instruction course at Mitchel Field, N. Y.

#### SIX NAVY FLYERS FOR SCHNEIDER CUP RACES

LIEUT. COMMANDER HOMER C. WICK, commanding officer of the Naval Air Station, Anacostia, D. C., has been designated as officer in charge of the U. S. Navy Schneider Cup racing team. The following officers have been ordered to report to him for duty in connection with the Schneider Cup Races to be held at Norfolk, Virginia, on October 24:

Lieut, G. T. Cuddihy, U.S.N., Anacostia Air Station; Lieut. F. H. Conant, U.S.N., Bureau of Aeronautics; Lieut. (j. g.) J. J. Glenhart, U.S.N., Scouting Fleet; Lieut. W. C. Tomlinson, U.S.N., Battle Fleet; and 1st Lieut. H. J. Norton, U.S.M.C.

#### LT. WILLIAMS TO TRY TO REGAIN RECORDS

LIEUT. ALFORD J. WILLIAMS, JR., of the Naval Air Station, Anacostia, D. C., will attempt to recapture the speed records for the United States. He has formed a corporation which is constructing a special speed plane, capable of being converted into a seaplane for this purpose. It is a private enterprise, financed by the flyer's father and friends.

The Navy Department is not officially participating in the project. However, they have granted Lieut. Williams an indefinite leave of absence from the service to enable Lim to carry out his ideas.

Lieut. Williams once held the world's speed record when he made 266.59 m p, h.

in a Curtiss Racer R-2 C1 at Mitchel Field on November 4, 1923. On December 11, 1924. Warrant Officer Bonnett, of the French Air Corps, broke his record by flying 278.480 m. p. h. in a Ferbois monoplane at Istres, France.

Lieut. Williams, formerly a pitcher with the New York Giants, graduated from Georgetown Law School last year, and three months ago passed the bar examination for the State of New York. Within the last month he has taken and successfully passed the examination for Lieutenant, senior grade. United States Navy.

#### ARMY PLANES TO CIR-CLE SOUTH AMERICA

A 16,000-mile flight around South America by five Army planes is being planned by the Departments of War and State.

Requests already have been made of the various countries on the proposed route for permission to fly over their territory. Although favorable replies have been received from some of these countries the route of the detailed plans of the flight will not be discussed until all the countries concerned have acquiesced to the request of the State Department.

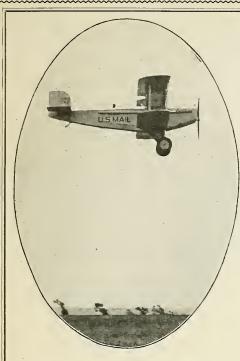
The purpose of this flight is to strengthen the amicable relations already existing among the American Republics and to demonstrate the feasibility of aerial transportation and communication between these widely separated nations.

#### SPECIAL UNIFORM FOR FLYING CADETS

THE War Department has approved a special uniform for flying cadets of the U. S. Army Air Service. The coat in olive drab cotton or wool will have a lapel collar of the type adopted for enlisted men. The Air Service insignia will be embroidered in silk on the left collar and the letters "U. S." on the right collar. A brassard of midnight blue, between 3 and 4 inches wide, with the Air Service insignia embroidered in gold and yellow will be worn on the sleeve. Trousers without cuffs will replace the usual breeches and there is authorized a field cap to be used while on flying duty.



One of the special Douglas 0-2-Ds for flying Generals of the U.S. Air Corps.



# LEECE-NEVILLE Voltage regulated generators for the completely equipped airplane

BECAUSE of the exacting demands placed on the electrical equipment of airplanes, Leece-Neville voltage regulated generators are found on an annually increasing number of ships.

All army air service planes—all U.S. mail planes used in night flying—and many others are so equipped.

Leece-Neville voltage regulated generators are developed to a high degree of efficiency. The regulation holds the voltage to very close limitations, in fact, close enough for delicate radio apparatus. It prolongs battery life, improves engine performance and assures ample current for electrical purposes.

To be completely equipped, an airplane must carry a Leece-Neville voltage regulated generator as its source of electrical current.

LEECE-NEVILLE CO.

5363 Hamilton Ave., Cleveland, O.

Say you saw it in AERO DIGEST

#### ARMY AND NAVY AIR SERVICE ORDERS

ARMY AIR SERVICE ORDERS THE following Army Air Service Orders have The following Army Air Service Orders are to been issued as of the dates indicated in brackets:

Brooks Field, Tex., for training. (Aug. 23)
Barrie, 2d Lt. Allen A., reserve. Hammonton, Calif., to active duty at Brooks Field, San Antonio, Tex.
Baxter, 2d Lt. Thirston II., reserve, Jerseyville, III., to active duty at Brooks Field, San Antonio, Tex.
[Aug. 16]
Bayley, 1st Lt. Eugene B., leave of absence, 1 month.
Berg, 2d Lt. Rohert H., reserve, San Francisco, Calif., to active duty at Brooks Field, San Antonio, Tex.

Bissell, Pvt. Joseph A., Langley Field, Va., to Brooks Field, Field, Field, Sin Antonio, Tex.

Bissell, Pvt. Joseph A., Langley Field, Va., to Brooks Field, Fi Breet, Maj. George Monroe, Flushing, N. Y., to McCook Field, Dayton, O., for training.

(Aug. 23)

Brown, Pet, Morris D., Sam Houston, Tex., to Brooks Field, Tex., for training.

(Aug. 23)

Brown, Pet, Morris D., Sam Houston, Tex., to Brooks Field, Tex., for training.

(Aug. 23)

Burwell, 2d Lt. James B., from Charlotte, N. C., to Brooks Field, Tex.

(Aug. 5)

Burton, Coppl. William F., Wright Field, O., to Brooks Field, Tex., for training.

(Aug. 23)

Carlson, 2d Lt. Oscar Frederick, from Seattle, Wash., to San Antonio, Tex.

Carr, Pvt. John A., Selfridge Field, Mich., to Brooks Field, Tex., for training.

(Aug. 23)

Chidlaw, 2d Lt. Benj. W., leave of absence, 2 months, 14 days.

Clagget, Maj. Henry B., from Bolling Field, D. C., to Presidio of San Francisco, Calif. (Aug. 10)

Crasse, Pvt. Errol C., Selfridge Field, Mich., to Brooks Field, Tex., for training.

Creasy, 2d Lt. William M., ir., from Wilmington, N. C., to Brooks Field, Tex., for training.

Clayer, Lt. Col. Clarence C., designated commandant, Air Corps Tactical School, Langley Field, Va., relieved from Kelly Field, Tex. (July 31)

Cumberpatch, 2d Lt. James Thorburn, promoted to 1st Lt.

Ballas, 1st Lt. Burnie R., from Washington, D. C., to San Diego, Calif.

Davidson, Maj. Howard C., from duty as asst. military attache, London, England, to Mitchel Field, N. Y.

Davison, 2d Lt. Vern Cecil, Lincoln, Nehr., to Chanute Field, Rantoul, Ill., for training. Chanute Field, Rantoul, 111., for training, (Aug. 23)

Des Islets, 2d Lt. Robert E. M., from Methlehem, Pa., to Brooks field, Tex.
Donohoe, Capt. Guy Francis, New York City, to Mitchel Field, N. Y., for training. (Aug. 23)
Draper, 2d Lt. Charles S., reserve, Palo Alto, Calit, to active duty at Brooks Field, Tex.

(Aug. 16)

Eppright, 2d Lt. George J., reserve, Manor, Tex., Calif., to active duty at Brooks Field, Tex.
(Aug. 16)
Eppright, 2d Lt. George J., reserve, Manor, Tex.,
to Brooks Field, Tex.
Foster, Pvt. Berton D., Selfridge Field, Mich., to
Brooks Field, Tex., for training. (Aug. 23)
Fowler, 2d Lt. Harry Watts, San Antonio, Tex.,
to Kelly Field, Tex., for training. (Aug. 23)
Frost, 2d Lt. Norme D., from Brooks Field, Tex.,
to Hawaian Dept.
Furrow. Capt. George Caldwell, Bristol, Tenn., to
Langley Field, Va., for training. (Aug. 23)
Gaffney, Staff Sgt. William M., from Chanute
Field, Ill., to Brooks Field, Tex.
Gillinor, Apt. Calvin E., from Mayo Clinic, Rochester, Minn., to Letterman Gen. Hosp., San Francisco, Calif., for treatment. (Aug. 5)
Gillmore, Brig. Gen. William E., leave of absence,
10 days.
Haddon, 2d Lt. Floyd Grier, Fairfield. O, to
Chanute Field, Rantoul, Ill., for training. Chanute Field, Rantoul, Ill., for training.
(Aug. 23)
Harlow, 2d Lt. Marvin Vernon, from Iron City,
Ga., to Brooks Field, Tex. (Aug. 12)
Harris, 2d Lt. Samuel R., from Washington, D. C.,
D Brooks Field, Tex.
(Aug. 5)
Hawthorne, 2d Lt. William B., from Harrishurg,
Pa., to Brooks Field, Tex.
(Aug. 5)
Hazen, 2d Lt. Ronald McKean, Minneapolis,
Minn., to McCook Field, Dayton, O., for training,
Heckert, 2d Lt. Fred W., reserve, Dayton, O., to
active duty at Chanute Field, Rantoul, Ill. Minn, to McCook Field, Dayton, O., for training.
Heckert, 2d Lt. Fred W., reserve, Dayton, O., to active duty at Chanute Field, Rantoul, Ill.
(July 28)
Heiser, 2d Lt. Benjamin P., from Marshfield, Wis., to Brooks Field, Tex.
(Aug. 5)
Huffman, 1st Lt. William Edward, McCook Field, Dayton, O., to Scott Field, Ill., for training.
(Aug. 23)
Ingram, 2d Lt. Lon C. jr., reserve, Terrell Tex.
to Brooks Field, Tex.
(Aug. 16)
Jaccard, 2d Lt. Paul August, from Seattle, Wash.
to San Antonio, Tex.
to San Antonio, Tex.
Johnson, Warrant Officer Perry B., from Kelly Field, Tex., to Selfridge Field, Mich. (Aug. 1)
Johnson, 2d Lt. Alfred H., from Donnyhrook, N.
D., to Brooks Field, Tex.
(Aug. 5)
Hunson, 2d Lt. Charles W., reserve, Amarillo, Tex., to Brooks Field, Tex. (Aug. 5)

Johnson, Pvt. Frederick II. jr., Kelly Field, Tex., to Brooks Field, Tex., for training. (Aug. 23) Kerr, 2d Lt. John A., reserve, Pasadena, Calif., to Brooks Field, Tex. (Aug. 16) Larratt, 2d Lt. Arthur E., reserve, Billerica, Mass., to Brooks Field, Tex. (Aug. 16) Lawrence, 2d Lt. Guy W., reserve, Dayton, O., to active duty at Chanute Field, Rantoul, Ill. Martin, Major Frederick L., orders designating him commandant, Tactical School, Langley Field, Va., amended to command, Bolling Field, D. C. Mills. 1st Lt. Charles H., from Walter Reed General Hospital, Washington, D. C., to Channte Field, III.

Motley, 1st Lt. Langhorne W., leave of absence, 1 mo. 15 days.

Moyer, 1st Lt. Max F., orders from Akon, O., to Hawaiian Dept., revoked. (Aug. 9)

Nelson, 2d Lt. Morris R., from Corydon, Iowa, to Brooks Field, Tex.

Nelson, 2d Lt. Horris R., from Corydon, Iowa, to active duty at San Diego, Calif. (July 28)

Oricht, Staff Sgt. Isadore, from Luke Field, H. T., to Mitchel Field, N. Y. (July 31)

Patrick, Maj. Gen. Mason M., Chief of Air Corps., leave of absence, 20 days. (Aug. 16)

Pichl, 2d Lt. William P., Evanston, III., reserve, to Brooks Field, Tex. (Aug. 12)

Prudhomme, 2d Lt. Shelton E., from Oberlin, La., to Brooks Field. Tex.

Saney, 2d Lt. Edward D. jr., from Beaufort, S. C., to Brooks Field. Tex. (Aug. 5)

Raney, 2d Lt. Rewinder D., jr., from Beaufort, S. C., to Brooks Field. Tex. Washington, D. C., to Brooks Field. Tex., To training. (Aug. 23)

Romisson, Staff Sgt. William T., from Brooks Field. Tex., to Chanute Field, III. (Aug. 7), retired, Langues Field, Va., under Field, III. (Aug. 7), retired, Langues Field, Va., under Field, III. (Aug. 7), retired, Langues Field, Va., under Field, III. (Aug. 7), retired, Langues Field, Va., under Field, III. (Aug. 7), retired, Langues Field, Va., under Field, III. (Aug. 7), retired, Langues Field, Va., under Field, III. (Aug. 7), retired, Langues Field, Va., under Field, III. (Aug. 7), retired, Langues Field, Va., under Field, III. (Aug. 7), retired, Langues Field, Va., under Field, III. (Aug. 7), retired, Langues Field, Va., under Field, III. (Aug. 7), retired, Langues Field, Va., under Field, III. (Aug. 7), retired Okla, to active duty at Post Field, Fort Sill, Okla, Okla, Okla, Cluly 28)
Scruggs, Pvt. John H., Denver, Colo., to Brooks Field, Tex., for training.
Selvig, Pvt. Winslow C., Scott Field, Ill., to Brooks Field, Tex., for training.
Ang. 23)
Shallenberger, Pvt. Lee C., Pope Field, N. C., to Brooks Field, Tex., for training.
Ang. 23)
Sheely, Pvt. Donald S., Mitchel Field, N. Y. to Brooks Field, Tex., for training.
Ang. 23)
Simonin, 1st 1.t. Arthur E., leave of ahsence, 2 months, 17 days.
Sims, 2d Lt. Turner A., from Little Rock, Ark., to Brooks Field, Tex.
Sipes, Pvt. Charles C., from 70th Service Squadron, to 7th Signal Service Company, Kelly Field.
Springs, Capt. Elliott White, Fort Mill, S. C., to Selfridge Field, Mich., for training. Sipes, Pvt. Charles C., ron, to 7th Signal Service Coup. (Aug. 25) Field.

Springs, Capt. Elliott White, Fort Mill, S. C., to Selfridge Field. Mich., for training. (Aug. 23) Stuart, 2d Lt. Frank B., reserve, San Antonio, Tex., to active duty at Brooks Field, Tex. (Aug. 16)

Tex., to active duty at Brooks Field, Tex.
(Aug. 16)
Sutton, 1st Lt. Harry A., from Camhridge, Mass.,
to McCook Field, Dayton, O. (Aug. 18)
Taylor, 2d 1t. William H., reserve, Newtonville,
Mass., to Brooks Field, Tex. (Aug. 16)
Thelsen, 2d Lt. Carl F., reserve, Meriden, Conn.,
to Brooks Field, Tex. (Aug. 16)
Tillery, 2d Lt. Manning E., reserve, Beaumont,
Tex., to active duty at Brooks Field, Tex.,
to Brooks Field, Tex., for training. (Aug. 23)
Toftoy, 2d Lt. Holger N., from Corvallis, Mont.,
to Brooks Field, Tex.,
to Brooks Field, Tex.
Vanck, Pvt. Glen V., Scott Field, Ill., to Brooks
Field, Tex., for training. (Aug. 23)
Von Harten, Maj. Anthony Earl, Salt Lake City,
Utah, to Crissy Field, Calif., for training. (Aug. 23)
Waller, 2d Lt. Gilbert, San Antonio, Tex. Kelly

Waller, 2d Lt. Gilbert, San Antonio, Tex., to Kelly Field, Tex., for training.
Waller, 2d Lt. Gilbert, San Antonio, Tex., to Kelly Field, Tex., for training.
Walsh, 2d Lt. Frederick E. jr., reserve, Watertown, Mass., to Brooks Field, Tex.
Warhurton, 2d Lt. Ernest K., reserve, Brighton, Mass., to Brooks Field, Tex.
Whisenand, 2d Lt. Walter B., reserve, Urhana, Ill., to active duty at Brooks Field, Tex.
Williams, 1st Lt. Arthur William, East Dedham, Mass., to Mitchel Field, N. Y., for training.
(Aug. 23)

Williams, 2d Lt. Melvin Ritchie, from Milledre-wille, Ga., to Brooks Field, Tex. (Aug. 12) Wilson, Capt. Arthur, reserve, Rochester, N. Y., to active duty at Mitchel Field, N. Y. (July 28) Woodbridge, 2d Lt. John P., from Newark, O., to Brooks Field, Tex. Woodruff, Pvt. William L., West Point, N. Y., to Brooks Field, Tex., for training. (Aug. 23) Yeomans, 2d Lt. Prentice E., from Syracuse, N. Y., to Brooks Field, Tex.

#### NAVY AIR SERVICE ORDERS

THE following Navy Air orders have been issued as of the dates indicated in brackets:
Boileau, Ens. Almerian R., assigned from Naval Academy, Annapolis, Md., to U.S.S. Aroostook.

[Aug. 13]
Boyle, Ens. Charles L., assigned from Naval Academy, Annapolis, Md., to U.S.S. Shawmit.

Carlin, Ens. Thomas F., detached Naval Air Station, Pensacola, Fla., to three months sick Carlin, Ens. Thomas F., detached tion, Pensacola, Fla., to three months sick leave.

Carter, Lt. William J. (SC), to add'l duty, Naval Air Station, Nav. Oper. Base, Hampton Roads, Va.

Chambers, Lt. Comdr. William (MC), detached Bureau Medicine and Surgery, to U.S.S. Lexible (Aug. 9)

Bureau Medicine and Sorger)
ington.
Chew, Lt. Comdr. Robert S. (SC), detached Naval
Aircraft Factory, Navy Yard, Phila., Pa., to
U.S.S. Arkanas.
(Aug. 17)
Corwin, Lt. Pleet W., detached U.S.S. James K.
Paulding, to Naval Air Station, Anacostia, D.

Harrill, Et. Comor. William R., to Wing Commander, Wing Aircraft Squadrons, Battle Fleet.

San Diego, Calif., to Naval Air Station, Pensacola, Fla.

Jordan, Pay Clk. Charles C., orders modified, to duty Naval Air Station, Lakehurst. (Aug. 24)

King, Ens. John W., to duty VT Squadron 2, Aircraft Squadrons, Battle Fleet. (Aug. 10)

Knox, Lt. Cornelius V. S. (C.C.), detached Naval Aircraft Factory, Navy Yard, Phila., Pa., to Inspector of Naval Aircraft, Aircraft Development Corp., Detroit, Mich.

Linsley, Ens. Ralph H., assigned from Naval Academy, Annapolis, Md., to U.S.S. 4roostook.

Long, Ens. Carleton G., assigned from Naval Academy, Annapolis, Md., to U.S.S. Patoka.

Lynch, Lt. William A., orders May 28, to Naval Air Station, Pensacola, Fla., revoked; detached

Long, Ens.
Academy, Annapolis, Md., to Color (Aug. 14)
Lynch, Lt. William A., orders May 28, to Naval
Air Station, Pensacola, Fla., revoked; detached
U.S.S. Quail, to duty nearest naval district.
(Aug. 25)
Aug. 25

Lynch, Lt, William A., orders May 28, to Naval Air Station, Pensacola, Fla., revoked; detached U.S.S. Quail, to duty nearest naval district. (Aug. 25).

Mackle, Ens. Frederick, assigned from Naval Academy, Annapolis, Md., to U.S. Aroostook.

Maguire, Cmdr. William A. (Ch.C.), detached Aircraft Squadrons, Battle Fleet, to Navy Yard, New York.

Mailo, Lt. Francis M., to command VO Squadron 1, Aircraft Squadrons, Scouting Fleet, to temporary duty Naval Air Station, Pensacola. (Aug. 21).

Miley, Lt. Clark II, (SC), detached Div. 27, Dest. Squadrons, Scouting Fleet, to Tor. and Bomhing Plane. Squadron 1, Aircraft Squadrons, Scouting Fleet, to Tor. and Bomhing Plane. Squadron 1, Aircraft Squadrons, Scouting Fleet, to Tor. (Aug. 13).

Perry, Lt. John, detached Naval Air Station, Pensacola, Fla., to Bureau of Aeronautics, (Aug. 13).

Perry, Lt. John, detached Naval Air Station, Lakehurst, N. J.

Perry, Lt. John, detached Naval Air Station, Lakehurst, N. J.

Prifold, Ens. George jr., assigned from Naval Academy, Annapolis, Md., to U.S.S. Patoka.

Rodgers, Comdr. John, detached asst. Chief of Bureau of Aeronautics, to temporary duty connection fitting PN-10 planes.

Wodgers, Comdr. Thomas, detached U.S.S.

Wright, to temporary duty, Naval Air Station, Pensacola, Fla.

Stuart, Ens. Lennox H., assigned from Naval Academy, Annapolis, Md., to U.S.S. Shawmut.

(Aug. 14).

Thomas, Ens. Francis I., orders July 12, to Navaf Aris Station, revoked; to continue duty U.S.S. Richmod.

Ward, Ens. Saule C., assigned from Naval Academy, Annapolis, Md., to U.S.S. Shawmut.

(Aug. 14).

Wod, Lt. Comdr. Ralph F., detached Aircraft Squadrons, Battle Fleet, to Naval Operations, Navy Dept.

Wood, Lt. Comdr. Ralph F., detached Aircraft Squadrons, Battle Fleet, to Naval Operations, Navy Dept.

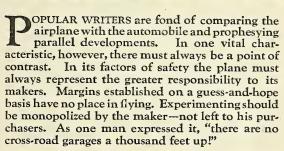
Wood, Lt. Comdr. Ralph F., detached Aircraft Squadrons, Battle Fleet, to Naval Operations, Navy Dept.



TRADE MARK

#### The Star in the Sky

Whether on the wing of a mail plane, a bomber, a navalreconnaissance plane or a commercial carrier, the tricolor star of The Glenn L. Martin Company holds the same significance to the experienced observer—engineering supremacy—fine workmanship and unremitting care—experience dating back to the infancy of the art seventeen years ago—DEPENDABILITY.



With the primary facts of flying established and mastered, the task of the engineer and manufacturer is radically changed. The goal is now maximum dependability. The study, the research, the experiment is today centered on the perfection of detail.

In this second stage of progress, the Glenn L. Martin organization is re-proving the same vision, the same painstaking research and the same creative capacity that enabled it to maintain its leadership throughout the first seventeen years of its contributions to the art of aviation. Its shops, its laboratories and its flying field continue to be the center of unremitting progress.

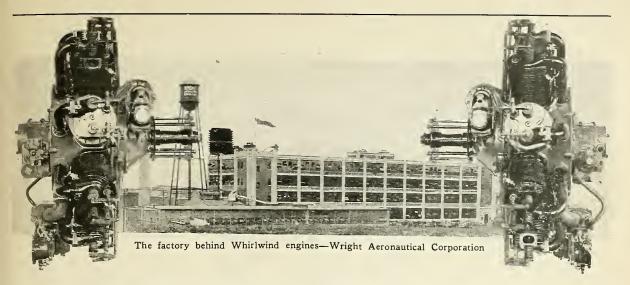


Nearly all the twenty-five airplanes participating in the recently completed Ford Reliability Tour are upholstered with real leather. Reliability being the key note of this annual contest, it is significant that real leather is used for seats and cockpit padding, etc., in the airplanes which led the field.

# IN THE FORD RELIABILITY TOUR Nothing takes the place of LEATHER AT THE PHILADELPHIA AIR RACES

At the National Air Races in Philadelphia, September 4th to 11th, just notice the upholstery of the airplanes. At this meet, the latest types of successful aircraft from all over the country will assemble for your inspection. The best of them will be found to be upholstered in real leather.

AMERICAN LEATHER PRODUCERS, Inc. 1 Madison Avenue New York City, N. Y.



### WRIGHT WHIRLWIND ENGINES

VERYWHERE the Whirlwinds are proving their reliability and establishing records for service. On the air mail lines operated by the government and by private operators, in the Army and Navy Air Services, and in commercial lines in all parts of the country, Wright Whirlwind engines are known for their dependable service. On the successful flight of Commander Byrd and Lieutenant Bennett over the North Pole no difficulty was experienced with the three power plants. Even when one of the oil tanks sprang a leak on this hazardous flight the engines continued to operate properly. In the tropical climate of South America Whirlwinds have demonstrated their ability to maintain even power despite adverse climatic conditions.

There are many outstanding features contributing to the success of this type of engine. Requiring no water radiator, water, piping, pumps, etc., as well as eliminating

many of the supports and other structures, the saving in weight is considerable. Doing away with this weight eliminates also the attending water system difficulties which have been a drawback to the development of many of the water-cooled type engines.

Wright Whirlwind engines have been thoroughly service-tested in the air such as no other air-cooled engines in the United States. They are being used successfully in the widest variety of airplane types—monoplanes, biplanes, single-engined and multi-motored commercial and military planes, both seaplanes and land types.

One reason for the popularity of the Whirlwind is the minimization of maintainance difficulties. The

spark plugs and carburetor are especially accessible and the valve gear is easily adjusted without tearing the engine down. Individual cylinders and push rod valve gear are features resulting in easy adjustment and upkeep.

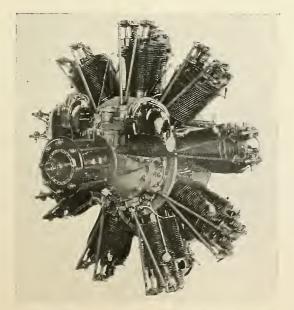
Installation of the air-cooled engine is comparatively simple. The shortness of the power unit as a whole permits its center of gravity to lie near the center of gravity of the airplane in which it is installed. This result is a closer coupling of the weights and better balancing of the airplane as a whole.

In the matter of friction which causes an enormous loss of power in any engine, a comparison with the average water-cooled engine will show the advantage of reducing the number of main bearings. A 12-cylinder V type water-cooled engine for example has six main connecting rod bearings, twelve to fourteen cam-shaft bearings and seven main bearings. In contrast with this the 9-cylinder Whirl-

wind has but one main connecting rod bearing, two main crankshaft bearings and one cam bearing.

The Whirlwind is a 9cylinder stationary radial air-cooled engine rated at 200 h.p. at 1,800 r.p.m. Without lubricating oil it weighs 480 pounds. Gasoline is consumed at the rate of 8 to 12 gallons an hour when running at cruising speed; maximum fuel consumption .025 pounds per h.p. hour. Oil is consumed at the rate of 2 to 3 pints an hour; .025 pounds per h.p. hour maximum. Starters of various makes may be fitted as desired—the Wright, Eclipse Inertia or the Aeromarine Inertia hand starters

The most spectacular flight with Whirlwind engines was that of the tri-motor VII



The Wright Whirlwind engine showing the mounting of the two standard 9-cylinder Scintilla magnetos.

Fokker monoplane which was flown over the North Pole. Captain Wilkins used a similar plane in his heroic explorations from Alaska for the Detroit Arctic Expedition. Planes of the same general type, converted for their particular services, are used by the Philadelphia Rapid Transit Company on the passenger and mail route between Philadelphia and Washington, and by R. W. Judson, President of the Continental Motors Corporation.

The single-engined Fokker Universal monoplane used by the Colonial Air Transport on the Contract Air Mail route between New York, Hartford and Boston, is Whirl-

wind-powered. The Curtiss Lark, also used by Colonial Air Transport on this mail route, is powered with a Whirlwind. The Patricia Exploration Company has been using a similar airplane for prospecting work in the vicinity of the gold regions of Red Lake, Ontario, Canada; in this case, skis are used instead of wheels for taking off from the ice and snow. Another extreme is presented in the Lark used by Florida Airways who flew their plane more than 300 hours in the first six months of operation.

Ford's three-engined all metal 10-passenger airliner, built by the Ford Motor Company, corresponds in general character to the big monoplane of Fokker. This plane

was given its first real try-out in the Ford Reliability Tour, and although it met with misfortune, causing damage, no difficulty was experienced with the engines.

Another monoplane proving its effectiveness on air mail lines on the Pacific Coast is the Ryan M-I, built by Ryan Airlines, Inc., of San Diego, California. The Pacific Air Transport uses Ryan ships on the air mail route from Los Angeles, California, to Seattle, Washington, the longest contract air mail route in the United States,—1,312 miles.

The prize-winning Travel Air built by Travel Air, Inc., Wichita, Kansas, is Whirlwind-powered. Flown by Wal-

ter Beech, the Travel Air won first place in the Ford Reliability Tour. The Pioneer Instrument Company uses this ship as a "flying show case," giving practical demonstrations of its navigating instruments. No better demonstration could be devised than the winning of the Ford Tour in which Brice Goldsborough acted as navigator for Beech throughout the contest in the ship which carried a full compliment of Pioneer instruments

Second in the Ford Tour was the Buhl-Verville Airster, the folding-wing "one-man" biplane built by the Buhl-Verville Aircraft Company of Detroit. Similar planes have been purchased by Henry Dupont of General Motors Corp. and by William Stout of Ford-Stout

fame, both planes being used for personal service,

Eddie Stinson, third in the Ford Tour with his Detroiter cabin plane, has delivered several of his planes to the Florida Airways. His factory in Northville, Michigan, is producing ships for many private owners.

A fleet of 14 planes powered with Whirlwinds was operated by Huff-Daland Dusters, Inc., Monroe, Louisiana, during the season of 1925. They are continuing the same operations this year.

Swallow airplanes built by Swallow Airplane Mfg. Company, Wichita, Kansas, are used by Walter Varney's Elko

(Nevada) to Pasco (Washington) Contract Air Mail route. On the air mail route from Chicago to Minneapolis, Laird planes built by E. M. Laird Airplane Company, Chicago, are in daily operation.

The Brazilian Government has purchased a photographic plane built by Sikorsky Engineering Corporation, Westbury, L. I. Among the newer aircraft companies to equip their planes with Whirlwinds is the Waterhouse Aircraft Company of Glendale, California. Their steel-fuselage monoplane has been performing in a highly efficient manner.

In the military services, particularly in the Navy, Whirlwind engines have found high favor.

Among the naval aircraft equipped with Whirlwinds are:

The UO-1 two-place convertible land and sea plane used by the U. S. Navy and the Cuban Air Service for catapulting, deck landing and observation. These ships have been standard equipment on the Aircraft Carrier U. S. S. Langley. Admiral Moffett's special UO-1 is one of the most attractive planes in the service. Vought is also building the UO-3 single-seater fighting, catapulting and deck-landing biplane for the U. S. Navy.

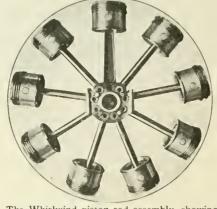
The two-place  $N\overline{Y}$ -1 was built by the Consolidated Aircraft Corp., Buffalo, N. Y., for primary training, as was

the NB-I built by Boeing Company, Seattle, Washington. The NB-I is also used by the Peruvian Navy. This plane is of the land-water convertible type.

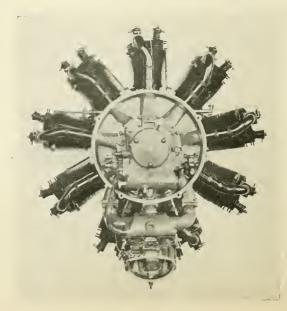
The U. S. Army Air corps uses a 3-engined Fokker VII arranged as a transport, built by the Atlantic Aircraft Corp., Hasbrouck Heights,

Huff-Daland & Co., Inc., Bristol, Pa., has supplied the Navy with the convertible 2-seater "Petrel" biplane which performs well with the Whirlwind. The TS-I built by the Curtiss Company for the Navy is another convertible single-seater deck landing plane.

Canadian Vickers, Ltd., of Montreal have produced a very successful flying boat, (Concluded on page 222)



The Whirlwind piston rod assembly, showing the master rod and eight articulated rods.



Direct rear view of the Wright Whirlwind showing intake manifolds and carburetor arrangement.

# WRIGHT WHIRLWIND **ENGINES**

FINISHED 1st, 2nd, 3rd,

in the

#### FORD RELIABILITY AIRPLANE TOUR

COVERING 2653 MILES, STARTING AND FINISHING AT DETROIT, MICH., AUGUST 4th-21st, 1926

Travel Air open cockpit, 4 seated plane, built by Travel Air Manufacturing Company, Wichita, Kansas, carrying 600 lbs. pay load. Powered with one Wright Whirlwind Engine. Walter Beech, President Travel Air Manufacturing Company, pilot.

2nd The Airster, built by Buhl-Verville Company, Detroit, Michigan, carrying 800 lbs. pay load Powers 1 Whirlwind Engine. Louis Meister, pilot.

The Detroiter, built by Stinson Aircraft Company, Northville, Michigan, 4 seated cabin plane carrying 550 lbs. pay load. Powered with one Wright Whirlwind Engine. Eddie Stinson, President Stinson Aircraft Company, pilot.

WRIGHT AERONAUTICAL CORPORATION PATERSON, N. J., U. S. A.

Acre Pilots y them /

# AIRCRAFT

were not entered in the second annual FORD RELIABILITY TOUR because — public demand for these safe, reliable "TRI-MOTOR" and "UNIVERSAL" planes has for the present exceeded production.

The most convincing demonstration of the superior reliability of FOKKER Aircraft is their commercial operating record. They are flying more than 10,000 miles per day, on regular schedule.

FOKKER "TRIMOTOR" 10-passenger planes are flying twice daily from Philadelphia to Washington and return with passengers and U. S. Air Mail — FOKKER "UNIVERSAL" 5-passenger planes are carrying U. S. Mail daily between New York and Boston.

Among 1926 purchasers of FOKKER commercial craft are the U. S. Government — the Byrd Arctic Expedition — the Detroit Arctic Expedition — Continental Motors Corporation — Philadelphia Rapid Transit Company — Colonial Air Transport, Inc. — Edward Hubbard Airlines of Seattle — British Air Ministry — K L M Air Lines — etc.

FOKKER "TRIMOTOR" AND FOKKER "UNIVERSAL" PLANES ARE POWERED WITH WRIGHT ENGINES

#### FOKKER AIRCRAFT CORPORATION

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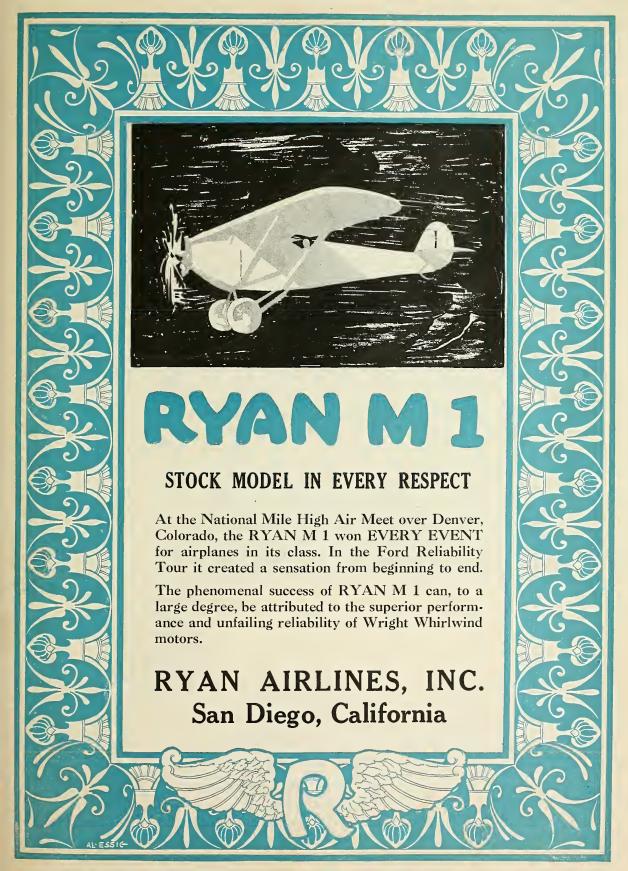
Phone Ashland 9195-Cable Fokplanes, N. Y.

#### ATLANTIC AIRCRAFT CORPORATION

Factory and Flying Field

HASBROUCK HEIGHTS, NEW JERSEY

Phone Hasbrouck Heights 510-Cable Atlair Hackensack, N. J.





When Byrd and his intrepid crew...

shoved off for the Arctic Unknown, months of most careful preparation were behind them, for no smallest detail of engine equipment had been overlooked to make more certain the accomplishment of his lifetime putpose.

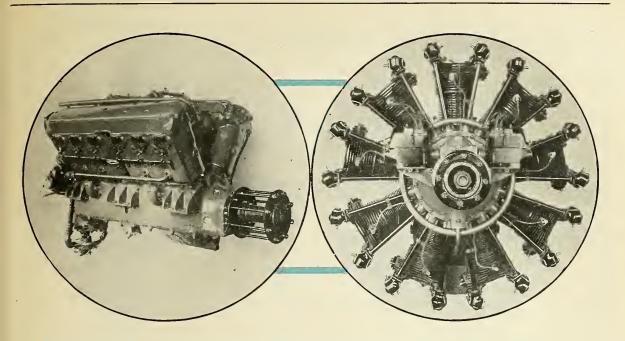
Into the sturdy mechanisms of the magneto drives and the drives

Into the sturdy mechanisms of the magneto drives and the drives of the oil and fuel pumps that fed the thundering engines, went SRB Ball Bearings to stalwartly share the responsibility of this great test.

Ball Bearings to stalwartly share the responsibility of this great test.
Thus every moving part of the gigantic Fokker Plane driven by three Wright Whirlwind Air-Cooled Engines was tested and tuned to the mechanical perfection so necessary to bring success to this great Aerial Pioneer.

USE SRB BALL BEARINGS-First

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# Newest Wright Engines "Bank on" SIGF Ruggedness to Carry Through

STEP by step, Sign has kept pace with aeronautical development. On every epoch-making flight in the past decade sign marked anti-friction bearings have been chosen to "carry through" because of their ruggedness and reliability.

It is fitting that recognition of this pioneering and leadership should lead to the adoption of ECF marked anti-friction bearings in the latest Wright engines, types, T-3A and I-5, shown above.

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The salt cooled valve has the following advantages:

#### WHAT IT IS

A salt cooled valve has a hollow stem partially filled with a salt which is molten at engine operating temperatures. The rapid reciprocation of the valve agitates the molten salt resulting in a purely mechanical transfer of heat from the valve seat—where temperatures are high, to the valve stem—where heat may be dissipated to the valve guide bushing and the cylinder block. The effective surface available for heat dissipation is thus increased by about six hundred percent.

Lower operating temperatures. Salt cooled valves run "black" under conditions where un-cooled valves operate at "red" heats

Lessened tendency toward detonation and pre-ignition due to lower operating temperatures.

Elimination of valve burning, distortion, pitting and wear, with greatly increased life.

Permits the use of a single valve in eylinders whose power output would otherwise require dual valves.

Improves the fuel consumption by lessening the tendency for detonation with lean mixtures.

Owing to these important advantages salt cooled valves offer an opportunity to improve the performance of aviation, marine, bus, truck and tractor engines; generally without alterations to the existing design. Write for detailed information.

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Valve specialists in silcrome and other alloy steels

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# Original Equipment in Wright Airplanes



A tulip-type Thompson valve used in Wright Engines.

In the spring of 1922, the U. S. Government tested a Model E-2, 180 H. P. Wright Airplane Engine, mounted on a block and operated with the throttle wide open, forcing the valves to work at white heat.

Three valves were in competition to meet the Government requirement of fifty hours' continuous running under these conditions.

A High Tungsten Valve failed in a few hours.

A Stainless Steel Valve failed in about thirty hours.

The Thompson Valve was taken out in good condition after three hundred hours, and was then installed in another engine under ordinary working conditions. As a result, the Government standard for this test was raised to three hundred hours.

Since then, Thompson Valves have been standard equipment in Wright Airplanes, and have also been adopted by leading airplane and automobile builders in America and abroad.

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Say you saw it in AERO DIGEST



## Bohn Ring True Bearings picked for Supreme Test

Because of the great responsibility of bearings in any engine—we are especially proud that Bohn Ring True Bearings were picked for this supreme test of aviation design.



Bohn Products include Ring True Bearings — Bohnalite Castings, both permanent mold and sand, Nelson Bohnalite pistons; we also supply the government with replacement pistons and bearings for the Liberty engine.

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EAST GRAND BOULEVARD, DETROIT

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Dependability is the main consideration in selecting a bearing metal for Aeronautical Motors.

Bearium Bearings are standard in Wright Engines.

#### BEARIUM BEARINGS

INCORPORATED

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# Tioga Engine Parts Contributed to the North Pole Flight

IN a message to the Wright Aeronautical Corporation, Lieut. Comdr. R. E. Byrd reported that his three 200 h.p. Wright Whirlwind aircooled radial engines functioned perfectly during his entire 15 hour 51 minute flight to the North Pole and return to Kings Bay.

Behind the wonderful reliability of these American aircraft engines is sound design, engineering, materials and workmanship, no less in the components of which the engines were constructed than in the finished product.

Naturally, therefore, it is a source of satisfaction to this company to be able to say that

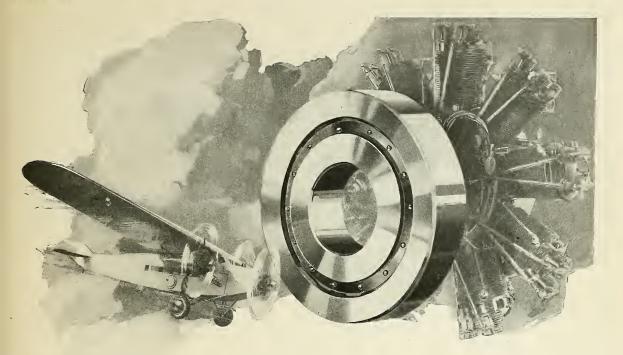
# TIOGA STEEL CYLINDER SLEEVES are used in Wright; Whirlwind Engines

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Subsidiary of Taylor-Wharton Iron & Steel Co., High Bridge, N. J.
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ECAUSE every proved safe-guard against engine failure must be provided, two "HOFFMANN" Precision Roller Bearings carry the crankshaft of the

# WRIGHT "WHIRLWIND" AVIATION MOTOR

At these vital points, the unmatched "Hoff-MANN" combination of load-ability with speed-ability affords that high factor of safety which Wright engineers demand.

Wherever operating conditions involve heavy loads, hard service, shock, jar, vibration and overloads—there is the place for the "HOFFMANN". Catalog 904.

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PRECISION BALL, ROLLER AND THRUST BEARINGS



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And in the smaller, but vital, accessories of safe aviation—magnetos, superchargers, earth inductor compasses and flight indicators—



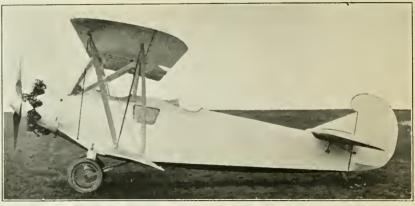
are giving that smooth, dependable operation at extreme speeds which "Precision" Quality alone can maintain. Catalog 905.



#### THE SIKORSKY



TYPE S-31



Equipped with a WRIGHT WHIRLWIND, the S-31 made the following performance record before the official representatives of the F.A.I. and N.A.A.:

High speed, 129.2 m.p.h. From a standing start it took off in 11 seconds with 7 passengers including pilot.

With 2 passengers beside the pilot, it climbed to 15,367 feet in forty-seven minutes.

Equipped for use on land or water

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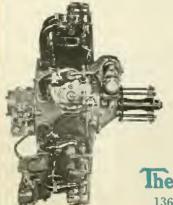
Roosevelt Field, Westbury, Long Island

The remarkable flight of Lt. Commander Byrd over the North Pole again proves that B. G. Spark Plugs are absolutely dependable under extremely difficult flying conditions in excessively cold climate.



The precision performance of the B. G. domestic mica spark plugs used in establishing this record is due to its patented construction which insures complete protection for the insulation.

# "Our three Wright engines functioned PERFECTLY!"—Byrd



B. G. spark plugs delivered the vital sparks in the three Wright Whirlwind Engines used in the Byrd Arctic Expedition. B. G. spark plugs are installed in Wright Aeronautical Engines used by the United States Army, Navy and Marine Corps.

Sectional
view of
Model IXA
B-G Aviation
Engine
Spark Plug

#### The B. G. CORPORATION

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## AT YOUR SERVICE

THE MEMBERS OF OUR ORGANIZATION WILL BE AT THE NATIONAL AIR RACES IN PHILADELPHIA IN THE INTERESTS OF OUR AIRCRAFT CLIENTS.

We will be happy to co-operate with those in the aircraft industry who have problems to solve during this epoch-making aeronautical event.

#### "IT WILL BE A GREAT SHOW"

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AND ASSOCIATES

Public Relations Counsel — Specializing in Aeronautics

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Types and equipment to suit all requirements

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The Huff-Daland "Pelican" seaplane powered with the 200 h.p. Wright "Whirlwind" engine

Supplying the demands of the discriminating investor in air transport equipment and airplane agricultural dusters where proven efficiency and dependable performance receive their full face value.

Three standard types of convertible land or sea-planes whose structures comply with United States Air Services Specifications.

THE PETREL — 3-passenger single-engine biplane; useful load 1200 lbs, THE PONDOR — 8-passenger twin or single-engine monoplane; useful load 3000 lbs.

THE PEGASUS-16-passenger single, twin, or 3-engined biplane; useful load 5000 lbs.

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# BAUSH METAL DURALUMIN

ROD and WIRE in standard sizes and shapes. Especially adapted for screw machine products and hardware. Most suitable for aircraft construction. Meets U. S. Government, Army and Navy specifications. Has the physical properties of mild steel yet it is as light as aluminum. Beautiful and permanent color-will not tarnish or rust. Onethird the weight of brass or steel.

Supplied in blooms, slabs, billets, sheets, forgings, rod, wire, tubing and extruded shapes.

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Sheet metal stampings manufactured by us are accurate and in complete accordance with customers' requirements.

We understand the exacting requirements of aeronautical manufacturers and are particularly well-equipped to manufacture to same.

THE BETTCHER STAMPING & MFG. CO. CLEVELAND, OHIO

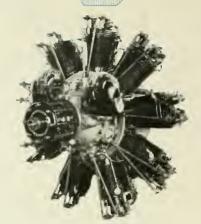
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WRIGHT WHIRLWIND

**ENGINES** 



"TOOLED
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"PRIDE IN FRONT-LINE ACHIEVEMENT IS REFLECTED
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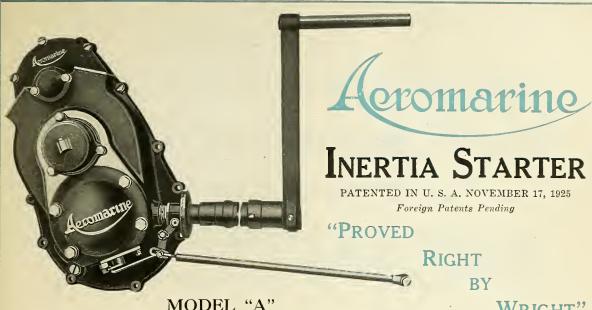
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The Wright "Apache" is one of the fastest types constructed for U. S. Navy shipboard uses. It is equipped with



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FOR ENGINES UP TO 2500 CU. IN. DISPLACEMENT, AND 150 LBS., PER SQ. IN. COMPRESSION

The 1925 NATIONAL ADVISORY COMMITTEE for AERONAUTICS in its Eleventh Annual Report to U. S. Congress, states that "the AEROMARINE INERTIA STARTER has solved the starting problem and is in wide use in the Navy."

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FOR DEPENDABLE SERVICE



A scientific instrument of proven quality well-adapted to aeronautical requirements.

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Over · the · Top — Byrd Expedition

#### MILLER & VAN WINKLE, INC.

Supplied the springs for the Wright Motors that propelled the BYRD EXPEDI-TION over the NORTH POLE.

The Vanadium-Valve Springs functioned perfectly

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# ALL THE ENGINES NOW BEING PRODUCED BY THE

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are equipped with

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### AERO SUPPLY MFG. CO., INC.

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Have Furnished

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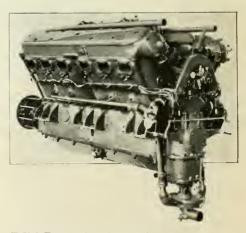
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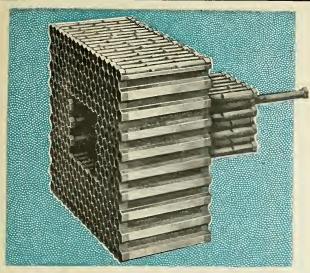
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W E supply the Wright Aeronautical Corporation with the water inlet and outlet manifolds on the Wright Tornado T-3 engines.

We manufacture all kinds of manifolds and bent tube products to specification.

American Tube Bending Corp., Inc.



Built of seamless copper tubes laid horizontally. Tubes can be removed individually or in sections, making repairs easy.

THE Wright Aeronautical Corporation are using the Cartridge radiator core for all Wright water-cooled engines. Experience has shown the superiority of the Cartridge core from the standpoints of exceptional cooling efficiency, water-flow capacity, ease of repair and ruggedness. The Cartridge radiator core is always specified for U. S. Government planes.

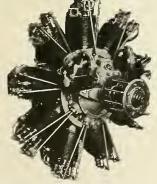
United States Cartridge Co.
RADIATOR DIVISION
LOWELL, MASS.





#### BOYCE MOTO METER

Used with Wright Whirlwind Engines



''We strongly advise the use of a good oil temperature indicating instrument on the Wright Whirlwind engine. In water cooled engines both water and oil

temperature instruments should be used. Our experience has been that the Boyce Moto Meter is highly satisfactory.''

(Signed)

J. T. HARTSON

Wright Aeronautical Corporation

The MOTO METER CO., Inc.

Industrial Thermometer Division

LONG ISLAND CITY, N. Y.

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# AVIATION CRANKSHAFTS

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THE PARK DROP FORGE CO.

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A bronze bearing metal of distinctly superior properties has for years aided in the development of famous Wright Aeronautical and Marine engines. Sumet needs no better recommendation.

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PRODUCTS Better Bearing A Longer Wearing

#### WRIGHT WHIRLWIND ENGINES

(Concluded from page 202)

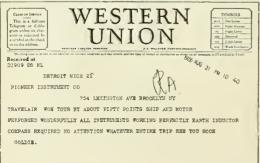
the "Vickers Vedette," used by the Royal Canadian Air Force and by Fairchild Aerial Surveys, Ltd., Grand'Mere, Canada. The Vickers twin-engined flying boat "Varuna" is another Whirlwind-equipped airplane used by the Canadian Government.

The Wright-Morehouse Air-Cooled Engine

Light plane construction in the United States has been given a distinct impetus by the production of the 25-30 h.p. Wright-Morehouse engine. This little air-cooled two-cylinder horizontal opposed engine delivers its rated power at 2,500 r.p.m. It has a bore and stroke of 3\% inches by 3\% inches and a piston displacement of 80 cubic inches. Without oil it weighs 89.5 pounds. At full throttle the average fuel consumption is 2½ gallons an hour. Installation drawings and a detailed description of this power plant appeared in the February, 1926, issue of Aero Digest.

Airplanes in which the Wright-Morehouse engines have been installed are: The Driggs-Dart monoplane which competed in the Ford Reliability Tour; the Jean Roché 2-seater light plane built at Dayton, Ohio; twin-engined plane of the Ludington Exhibition Co., Philadelphia; single-seater light plane built by Kreider-Reisner Aircraft Co., Hagerstown, Md., and which is to be flown by Charles W. Meyers at the Philadelphia Air Races; E. T. Allen's single-seater, built at Cheyenne, Wyoming. Some of these light planes are entered in the Air Races at Philadelphia this month, where they will compete for the AERO DIGEST Speed Trophy.

#### The Winning



#### Combination

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YOUR CONGRATULATIONS APPRECIATED WANT YOU TO KNOW THAT PIONEER INSTRUMENTS WERE DECIDING FACTOR CONSISTENT ACCURACY AND SPEED RESULT OF GOOD HAVIGATING PARTICULARLY ON LORG AND DIFFICULT LEGS WHERE WE MADE MOST POINTS EARTH INDUCTOR COMPASS WAS

WONDERFUL MANY THANKS FOR YOUR COOPERATION

#### Travel Air Plane-Wright Engine-Pioneer Instruments.

Goldsborough says: "Ship and motor performed wonder-

Beech says: "Pioneer Instruments were deciding factors." The Ford Tour has demonstrated that a well equipped airplane, properly piloted and navigated, can fly accurately and safely regardless of weather.

All flying is racing-racing against time and other modes of

travel. Time lost following rivers and railroads can never be regained.

Commercial aviation demands speed and straight flyingnot just for two weeks, but every week in the year. Pioneer Instruments, properly used, cut down elapsed time, increase operating efficiency, and reduce costs by saving wear and tear on engine and airplane.

See the "Flying Showcase" at the National Air Race

### PIONEER INSTRUMENT COMPANY

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Brooklyn, N. Y.

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# MEYROWITZ LUXOR GOGGLES

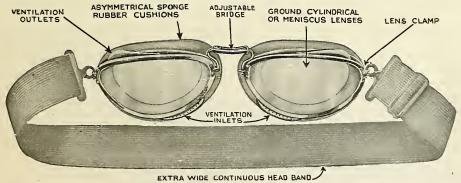


Walter Beech (right) winner of the Ford Reliability Tour, 1926, being congratulated by Louis Meister who finished second.

Both the Winner and the Runner-Up Wore the Famous

### NUMBER 6 U.S. AIR SERVICE MODEL

#### ORIGINATED AND MANUFACTURED EXCLUSIVELY BY E. B. MEYROWITZ



#### U. S. Air Service Model 6

#### LUXOR Goggles No. 6

With first quality white lenses... \$9.75 With first quality tinted amber or euphos (green) lenses....10.50

#### LUXOR Goggles No. 4



Write for Descriptive Circular



Contractors to the U.S. Government Paris
London
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520 Fifth Avenue at 43rd Street, New York City

## WESTERN NEWS

#### LONG BEACH MUNICIPAL AIRPORT

THE Long Beach, California, Airport, the accompanying photograph of which was taken by Kenneth Montee for Aero Digest, is the first municipal airport in this section of the country.

Signal Hill with its myriads of oil derricks, on the right of the picture, and the ocean beach line in the extreme background, give a good idea of its practical location for commercial aviation.

The field covers 80 acres, and it is the intention of the Long Beach city officials to add another 80 acres when the demand arises.

The prevailing winds being from the west, the usual direction for entering the field is from the east, but the field has two perfect runways, one running northeast from the south end of the field, and the other running west and south, making it possible to enter the field from almost any direction of the compass.

A number of the leading pilots of Southern California make the field their head-quarters. Every plane on the field is housed and kept up in the best of condition. Among those who own hangars is Earl Daugherty, who has the first double hangar, at the west end of the field, on entering from the highway. He owns and houses one "Orenco" plane; one Spad; one Fokker; one Polson Special; one Swallow; a "Laird" and one Jenny. His other planes are kept at his private field in Long Beach. Bud West is his chief mechanic and pilot.

The next hangar belongs to Tom Monday, and houses a Jenny used for his instruction

work, and a T. M. scout plane owned by his brother. They have two Ryan M. 2 Monoplanes on order.

Next on the line is the hangar of Al Ebright in which his Hisso Jenny, which he uses for commercial work, is housed. Also G. Staley, Municipal Civil Engineer of Manhattan Beach, Calif., and William McDowl keep their private ships here.

Ray Carpenter owns the next hangar for his student-instruction ship, a Jenny, and a private owned Jenny of Ed. La Due.

The York Aeronautical Engineering Co. recently acquired space on the field for their manufacturing plant, and will start at once building shops and hangars.

#### ROUND-THE-WORLD FLIGHT AIR MEET

P LANS are rapidly taking shape for the second annual air regatta commemorating the anniversary of the Round-the-World Flight finish. It will be held at Santa Monica late in September, under the auspices of the Southern California Chapter of the National Aeronautic Association.

The \$10,000 silver trophy donated by the Santa Monica American Legion is to be the chief incentive in the round-California flight. It was won last year by Lieutenant Wilkins of the San Diego naval air corps. Gold and silver medals, cups and merchandise prizes will go to runners-up in the event.

Besides Santa Monica, Santa Ana and Alhambra have been designated as ports of call. Others will be named soon,

The Santa Monica Chamber of Commerce, through its former president, Herman Michel, who has just been elected mayor of Santa Monica, and the chamber's secretary, M. W. McKenney, has charge of the Santa Monica participation in the meet. A. W. McPherson is to be chairman of the aeronautic committee for Santa Monica.

Valentinc Woodbury and P. C. Davis, president and sccretary respectively, of the Alhambra Chamber of Commerce, with Connie Bach, as chairman, will have charge of the Alhambra participations. Pasadena has loaned Alhambra its new airport on Valley boulevard for the event.

Santa Ana will have B. E. Northland, commodore of the Santa Ana Aero Club, in charge of the Santa Ana port of call with the cooperation of city officials there.

The National Aeronautic Association committee has A. Kruckman as executive chairman; Charles F. Willard, treasurer; Charles H. Babb, executive secretary; Roy Gradie, chairman of operations, and D. E. McDaneld of Pasadena as chairman of program and entertainment. Donald Douglas, president of the N. A. A. chapter, recently flew to Washington to confer with Army, Navy and N. A. A. officials, also with commercial firms, in the interests of the forthcoming meet.

#### NEW AIRPORT OPENED

ON Sunday, June 27, Captain C. A. Mackenzie and R. R. Benton officially opened California's latest airport, situated on Lankershim Boulevard, three miles north of the city of Lankershim. The opening was preceded by a free barbecue to which the public and all visiting flyers were invited.

The citizens of Lankershim and in fact the entire San Fernando Valley turned out in goodly numbers to start the boys off in their new venture. The coöperation that the flyers give to one another in Southern California is truly wonderful. This was shown by the number of flyers present, who were all anxious to contribute towards making the opening a success.

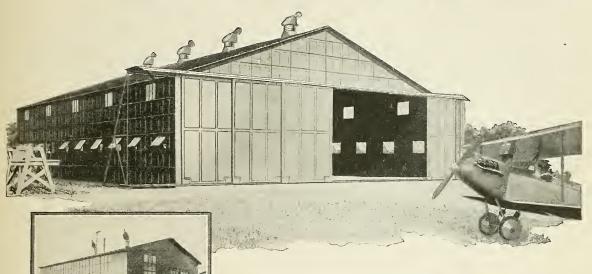
Among the prominent flyers who made the hop across the range, or up the valley, were Dr. T. C. Young, president of the Western Aero League, who flew his new sport model Kinner, Anzani six, plane; W. B. Kinner, head of the Kinner Airplane and Motor Corp., in another new Anzani six sport mode, accompanied by A. H. Lankford, Chief of the Glendale Fire Department; George Lyle in a new OX-5 Travel Air; Victor Fleming in his new Catron and Fisk Biplane; Leo Nomis, accompanied by Dick Ranaldi, the boy aviator, in Leo's Jennie; Art Wedemeyer and M. W. Stevens in their two Tommy's; Art Goebel, in his Jennie; and Al Gilhousen in his Standard.

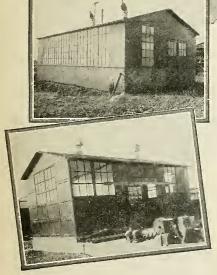
Dr. Young gave a short talk on the necessity of local air fields, and complimented the city on having two such live wires as Mackenzie and Benton.



Long Beach Airport, California, photographed by Kenneth Montee for Aero Digest.

# Permanent Steel Buildings For All Air-Port Needs





Truscon Buildings assure firesafety with economy. Types to answer any requirement can be furnished. Truscon Engineers gladly cooperate with you.

TRUSCON STEEL COMPANY  A. D. 9-26.
Youngsrown, Ohio  Send me your free catalog on Truscon Permanent Buildings for hangers, oil storage houses, etc.
Name

TRUSCON Buildings are specially designed to serve as hangars, oil storage houses, machine and assembly shops for aircraft of every description. They are non-burning and made of rust-resisting copper alloy steel. Low in cost, quick to erect and complete in every respect. Truscon Buildings meet aircraft housing needs.

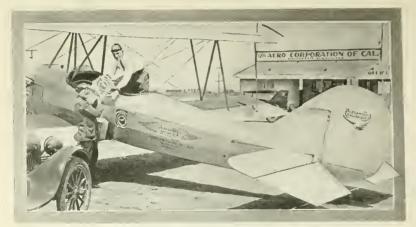
Return the coupon for a catalog of special interest to you.

#### TRUSCON STEEL COMPANY, YOUNGSTOWN, OHIO

Warehouses and Offices in all Principal Cities..\*
Railroad Dept., 165 & L. Érie St., Chicago, Ill.
Foreign Trade Division, New York.
The Truscon Laboratories, Detroit, Mich.
Trussed Concrete Steel Co. of Canada, Ltd., Wa'kersville, Ont.

# TRUSCON PERMANENT BUILDINGS

\*A complete line of Steel Buildings, Steel Windows, Metal Lath, Steel Joists, Steel Poles, Concrete Reinforcing for Buildings and Roads, Pressed Steel Specialties, Waterproofing & Technical Paints. Truscon maintains Engineering and Warehouse Organizations thruout the Country.



Aero Digest distributed to the airports of Southern California by airplane. Frank Samuels, Western representative of Aero Digest and Pilot Paul Richter.

#### THE WACO MAKES ITS PACIFIC COAST DEBUT

P ROGRESS of commercial aviation in the west has taken another forward step in the awarding of a California distributors contract for the improved Waco-9 to the American Aircraft Corporation, an organization of well-known Los Angeles bankers and business men, headed by Dr. Frederick Whitney, pioneer Pacific coast aviator.

The Advance Aircraft factory at Troy, Ohio, has seventy-one men at work in its plant turning out eight completed planes each week. Purchasers fly the planes away as fast as they are completed and the newly appointed California distributors followed that method in securing their first delivery. Dr. Whitney and Theodore T. Hull, vice-president of the Pan-American Bank of California and president of the American Aircraft Corporation, received the company's first Waco at the factory the day it was completed and took off for Los Angeles. They made the trip in 35 hours and 40 minutes flying time.

The American Aircraft Corporation will erect hangars on Clover Field, Santa Monica. It is extending an organization of dealers throughout California.

#### THE FISK C.F.15 BIPLANE

THE C. F. 15 is a two-place single bay biplane designed and built by Edwin M. Fisk of Catron & Fisk Co., Venice, California. It was huilt on custom order for Victor Fleming of Hollywood, the well-known director of Paramount-Lasky motion picture productions.

During recent test flights conducted at Clover Field, Santa Monica, the C. F. 15 was piloted separately by Howard E. Patterson, Frank Clark and G. G. Budwig. On the initial flight Clark subjected the ship to an extreme stunt test, the high point being a double harrel roll terminating in a loop.

Since his initial effort as an aeronautic engineer in 1910, Fisk has developed and produced many fine custom-built ships. He has designed and built monoplanes, biplanes and triplanes, single, double and triple-motored jobs, and has to his credit the design and construction of the first three-motored airplane in America, a successful triplane completed in 1916. He was one of the founders and first officials of the old Aero Club of Southern California.

The general characteristics of the C. F. 15 biplane are: type, single hay biplane; purpose, commercial, photo mapping, sport; capacity, pilot and passenger; cruising range, 6 hours at 120 m.p.h.

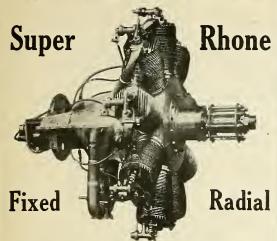
Dimensions: span, (hoth wings), 33 ft.; length over all, 24.5 ft.; chord, (both wings), 4.5 ft.; angle of incidence, (top

(Concluded on page 228)



# GENERAL ELECTRIC

BOOK YOUR ORDERS NOW FOR EARLY DELIVERY



# Air-Cooled Aircraft Engine 120 HORSEPOWER at 1400 REVOLUTIONS

We offer the commercial aviation field this new engine at a popular price.

Low maintenance cost. Surpasses all others in ease of operation, installation, service and repair.

Write for Booklet A. D. 1.

Super Rhone Engine & Flying Corp.

Exclusive Sales Agents

P. O. Box 153

Houston, Texas

K.W. Montee Aircraft Co.

Clover Field Santa Monica, Cal.

SPECIALIZING IN

AERIAL SURVEY

OBLIQUE PHOTOGRAPHY

Custom Built Aircraft

<del>CONTRACONALIZACIONE DE LA CONTRACONALIZACIONE CONTRACONALIZACIONE</del>

# AVIATION GASOLINE

ANHANDLE experience in the manufacture of AVIATION GASOLINE is older than the World War itself. Even before Uncle Sam entered the conflict our Company was supplying Aviation Gasoline to the Allies in remarkable quantities.

O PRONOUNCED was our success in the manufacture of this fuel, and so well known were our products, in every State and Field, that during the war we furnished nearly the entire requirements of every Flying Field in Texas.

HE BOYS of Kelly and Brooks Field, San Antonio; Taliaferro Nos. 1 and 2, Ft. Worth; Love Field, Dallas; Rich Field, Waco; Ellington Field, at Houston and Call Field, Wichita Falls, will bear witness to the fact that our Gas entirely meets the demand, and that PAN-HANDLE knows the needs of aircraft, and are equipped to specifically prepare the fuel for the unfailing duty it must perform.

OT ONLY during the war did we furnish Uncle Sam's aircraft, but immediately after the war it was our duty, by contract, to furnish every Government Flying Field east of the Rocky Mountains their entire requirements. And even NOW we are supplying almost all of Texas and Ft. Sill, Okla., their requirements, which represents approximately 700,000 gallons the first half of this year.

HEREFORE, with such a substantial and dependable recommendation you well know our ability in the manufacture of Aviation Gasoline is unquestioned, and we will welcome an opportunity to quote you.



#### Department of Commerce

Selects

#### SPERRY BEACONS

—orders 90 of the 24" size for use on the Country's principal airways.

The Sperry Gyroscope Company is recognized as a leader in light projection and is a pioneer in airway beacon and landing field lights. When planning your field take advantage of this knowledge and experience. Ask Sperry Engineers to assist in the layout of the lighting equipment—it incurs no obligation.

Our Booklet 20-1622 sent upon Request



Sperry 24" Beacon



#### THE SPERRY GYROSCOPE COMPANY

MANHATTAN BRIDGE PLAZA, BROOKLYN, NEW YORK Contractors to U. S. Army, Navy, Air Mail and Dept. of Commerce.

wing), 1; angle of incidence, (lower wing), none; decalage, 1; stagger, 25 in; dihedral, (upper wing), none; dihedral, (lower wing), 21; gap at fuselage, 5 ft.; wing curve, Clarke Y.

Areas (in sq. ft,): total wing area (including ailerons), 285; ailerons, 32; stabilizer, 20; elevators, 16; fin, 4.5; rudder, 9.

Weights (pounds): weight empty, 1450; two people, gas, oil and water, 900; weight loaded, 2350; weight per sq. ft., 8.25; weight per horsepower (Wright E-3 motor), 11.75.

Performance: high speed (2000 r.p.m. Wright E-3 and dural prop), 140 m.p.h.; cruising speed (1700 r.p.m.), 120 m.p.h.; minimum flying speed, 50 m.p.h.; landing speed, 40 m.p.h.; climb first minute, 1000 ft.; service ceiling, 15,000 ft.; absolute ceiling, 19,000 ft.; gas capacity, 75 gals.; oil capacity, 8 gals.

Equipment: Bakelite instrument board

with complete instrument installation; elkskin upholstering throughout; chrome-molybdenum tubing fuselage; all fittings of duralumin; Hartshorn streamline wires throughout, and complete lighting equipment for night flying.

#### THE DENVER AIR MEET

In the National Mile High Air Meet held at Lowry Field, Denver, Colorado, on August 1, 2 and 3, in conjunction with the Colorado Semicentennial Jubilee, the Ryan Airlines, Inc., was awarded the Grand Sweepstakes Silver Trophy for the manufacturer of the commercial airplane having the best all around performance during the meet. The Alexander Eaglerock also made a very excellent showing at the meet.

The "On-to-Denver" Race was contested and the cash prizes, totalling \$1,450, were divided.

The National Guard Trophy Speed Race was won by Licut. D. F. Kearns, with Licut. V. D. Stone, second.

In the Formation Flying event, limited to five ships each of the Army, Marine and National Guard, the Marine were awarded first prize and the Frank E. Kistler Trophy; National Guard, second; and Army, third.

Tex La Grone in a Waco took first prize in the Speed Race for planes of 100 h.p. or less; Lieut, R. R. Rolando in the Alexander Eaglerock, second.

The Ryan M-1, piloted by Vance Breeze, came in first in the Speed Race for planes over 100 h.p., and the Whirlwind-motored Travel Air, second.

Lieut. Lewis W. Goss, National Guard pilot, scored first in the Precision Landing contest; Capt. Campbell, Marine Corps, second; Lieut. Whitsing, Army, third.

The Altitude Race for planes of 100 h.p. and less, was won by Tex La Grone in a Waco; Lieut. Vernier, second, in the Alexander Eaglerock. The Altitude Race for planes over 100 h.p. was won by Vance Breeze in the Ryan M-1; second, the Woodson Express.

Capt. Mulcahy, Marine Corps, came in first in the Liberty Trophy Race for U. S. Army Regulation DH planes; Lieut, D. F. Kearns, National Guard, second.

The Pony Express Race was won by Lieut. D. F. Kearns; Capt. Cordner in a Woodson Express, second; Lieut. V. D. Stone, third.

The Reliability Race to Colorado Springs and Pueblo was won by the Woodson Express, piloted by Captain Cordner.



The Kinner Airster powered with an 80 h.p. Anzani 6-A-3. A close-up of the hinged mount showing simplicity and accessibility for repairs and adjustment.

HOOVER FIELD
The Washington Terminal of P. R. T. Air Service, Inc.
YOU are invited to inspect the steel, brick and concrete construction passenger station and hangar with conveniences for passenger comfort and efficiency of the operating personnel.

Designed and built by an organization the requirements for aircraft operation and proper maintenance.
Adequate light and ventillation, providing working conditions which assure efficiency and economy.

Hangar Al. Buffalo Airport, Buffalo, My, v., stire 4 days construction

William E. Arthur & Co., Inc.

Aeronautic Engineers and Builders
103 Park Avenue New York City



















## THE S-35 IS FLIGHT TESTED

THE initial flight of the Sikorsky air transport S-35 was made on August 23rd at Roosevelt Field, Westbury, Long

Island, where the plant of the Sikorsky Manufacturing Company is located. The news was greeted with enthusiasm not only by the entire Sikorsky organization but by hundreds of air-minded men and women who had been following the preparations for the New York-Paris non-stop flight with a great deal of interest. The pilot on the initial flight of the S-35 was Igor Sikorsky, its designer and builder. With him were Captain René Fonck, Lieutenant Allen P. Snody, U. S. N. and Captain Homer Berry, who have been designated as members of the crew of the S-35 on its transatlantic flight.

The S-35, designed and built for freight and passenger service, is powered with three Gnome-Rhone-Jupiter engines, each delivering 420 h. p. and will fly with full load on any two engines. Compensating rudders developed by Mr. Sikorsky permit the use of any combination of engines from one to three without affecting ease of control. Captain Fonck and Lieutenant Snody reported that the big ship handles with the ease of a chasse machine.

Proof of the confidence of its designer in the performance was shown by the fact that on the initial flight only two engines were used. The take-off required only 13 seconds allowing the ship to lift herself off. The flight was made with a useful load of 4,000 pounds, consisting of fuel, passengers and ballast. Flying with a single motor a constant altitude was maintained without difficulty. After the first successful short hop, the S-35 was headed for New York and a complete circuit of Manhattan Island was made.

In addition to the important safety factor represented by

its reserve power, the S-35 is fitted with a number of refinements which provide the utmost in comfort for air passengers. The cabin walls, floor and ceiling are built to absorb vibration and to maintain an even temperature within the cabin by means of a sheathing of Balsam Wool. Passengers can sit in the cabin of the S-35 while in flight and converse in an ordinary tone of voice. Lack of vibration induces relaxation and eliminates the tension which many inexperienced air travelers feel. Rapid and

William A. Rogers

A. Rogers

often encountered in varying altitudes are not noticeable in the cabin in which beauty is combined with comfort. The interior of the S-35 is finished in artificial pigskin on which is impressed the Sikorsky wing insignia

extreme changes of temperature

pigskin on which is impressed the Sikorsky wing insignia to form a design on the frieze of the cabin walls. It is equipped with beautiful wicker chairs. All the appointments blend in a harmonious color scheme.

The New York-Paris flight, the completion of which will establish new non-stop flight records with a minimum distance to be covered of 3,600 miles, has an added incentive in the \$25,000 prize offered by Raymond Orteig, owner of the Lafayette and Brevoort Hotels in New York. The flight is sponsored by the Argonauts, an organization whose members are: Robert Jackson, Concord, New Hampshire; Arnold C. Dickinson, Fitchburg, Massachusetts; Colonel Harold E. Hartney, Vice-president of the General Airways System and a World War ace; and Igor I. Sikorsky, designer and builder of the S-35. Mr. Sikorsky designed and built the first multi-motored airplane in the world.

Preparations for the flight are progressing rapidly. Radio equipment is being installed to transmit on both short and long wave lengths, which will permit constant communication en route with ships and land stations. The fuel to be used is stored in specially constructed tanks placed immediately behind the engines.

A technical description of the S-35, giving many details of construction, was published in June Aero Digest. Briefly, the ship is built entirely of duralumin with fabric covered wings, fuselage and tail surfaces. The normal wing span is 76 feet but for the New York-Paris flight 12½ foot wing panels were added to each side, bringing the total span to 101 feet. The total weight, fully equipped for the

flight, with fuel, radio and crew will be 24,200 pounds. The wings have a specially designed section developed by Sikorsky for high lift.

In the following group of pages, organizations which supplied materials, parts and service for the S-35 tell an interesting industrial story in the form of a series of advertisements. Their cooperation and personal interest in perfecting the innumerable details of the S-35 is responsible in a large measure for the complete success of this modern air leviathan.



Underwood and Underwood.

Sikorsky and Fonck after the first test flight of the S-35.

# ANNOUNCING



The new three engine air transport S-35 which made its initial flight on August 23rd over New York City and is now undergoing extensive tests in preparation for the New York to Paris non-stop flight.





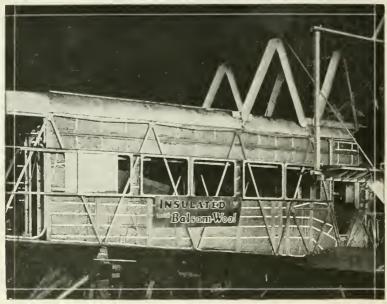
Capt. Fonck, French pilot, Igor Sikorsky, designer, and Lieut. Snody, American pilot, of the Sikorsky S-35.

The S-35 has a power group composed of three Gnome-Rhone-Jupiter engines delivering a total of 1260 h.p. Completely enclosed cabin accommodates 12 passengers with additional freight and baggage.

### SIKORSKY MANUFACTURING CORPORATION

250 West 57th Street, New York, N. Y.

Field, Westbury, L. I.



The S-35 just before applying the outer fabric, showing the Balsam-Wool heat and sound insulation in place on the cabin side-walls.

### Now—Comfort Enters Aviation

AN airplane cabin in which conversation is possible in normal talking tones. An airplane cabin whose occupants feel no change of temperature from low altitudes to high and back again.

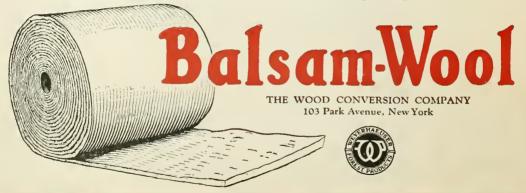
That is what has been accomplished in the Sikorsky Transatlantic Air Liner.

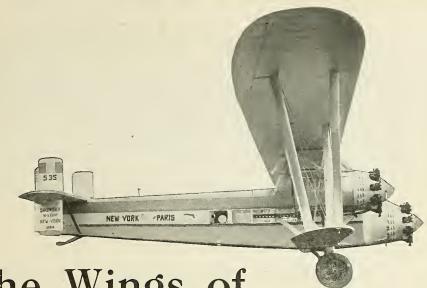
By Balsam-Wool—built into the walls, roof and floor of the fuselage.

Balsam-Wool is a soft blanket of

fine wood fibres—a heat insulator and a sound deadener without equal. It is light in weight and flexible—moisture proof, wind proof, fire-resistant.

The Balsam Wool installation on the S-35 is the first complete installation of its kind ever made. It marks the beginning of a new step in aviation—comfort—warmth and protection against deafening noise for aviator and passengers.





# On the Wings of PROGRESS!

SIKORSKY, with the world to choose from and laboratory tests for guidance, selected Berry Brothers' Aircraft Finishes for the giant S-35.

Lionoil, the most remarkable rust preventive and wood preservative known to science, is used on the metal parts of this great three-motored, New York-to-Paris biplane. The fuselage is finished with Berryloid—a highluster pyroxylin enamel impervious to the effects of gasoline, oil, salt water and the elements.

As further evidence of Berry Brothers' importance in the manufacture of aircraft finishes, 16 of 25 planes that started in the Ford Reliability Tour

were finished with Berryloid, Lionoil and other Berry products.

Travel Air, winner of first place, had its metal parts protected with Lionoil, and its fabric, metal cowling and struts finished with Berryloid. Buhl-Verville Airster, winner of second place, had Lionoil on its metal framework and Berryloid on fabric and metal. Stinson-Detroiter, winner of third place, had its metal finished with Lionoil and Berryloid.

Berryloid, like Lionoil, is without equal for aircraft purposes. On fabric it provides a wear-resisting, practically indestructible finish that permits free patching.

Address the aviation department for color cards and information about Berry's Aircraft Finishes.

# BERRY BROTHERS Detroit, Michigan Walkerville, Ont.



#### SIKORSKY'S TRANSATLANTIC AIRPLANE

is equipped with specially-designed leatherupholstered seat cushions to give the greatest ease to the daring pilots who will fly the giant airplane across the Ocean

# Nothing takes the place of LEATHER

Wear-resisting leather lasts. Although it is tough and long-lasting it is soft and pliable. After years of hard usage in all kinds of weather it retains its beautiful appearance. Chosen for the world's best aircraft.

American Leather Producers, Inc.

One Madison Avenue

New York, N. Y.



TITANINE dope is used on the wings, tail and body of the SIKORSKY tri-motor airliner, S-35, to provide the best possible protection to the fabric during severe climatic conditions during the flight across the Atlantic ocean.

# \*TITANINE

REGISTERED TRADE MARK

DOPES, PIGMENTED DOPES, VARNISHES, ENAMELS

for aircraft services, have long been standard specification for manufacturers of America's outstanding aircraft.

TITANINE, Inc. Union, Union County, N. J.

Contractors to the U. S. Government



The wings, body and tail surfaces of THE SIKORSKY S-35 are covered with

#### FLIGHTEX FABRIC

GRADE A COTTON CLOTH

**GUARANTEED** 

to meet specifications of the

ARMY AND NAVY AIR SERVICES

E. S. TWINING & CO. 320 BROADWAY, NEW YORK

# Specialists in Airplane tank design and manufacture

Satisfactory airplane tank manufacture requires a combination of: (1) experience in tank design, in order that the tank will be as light as possible consistent with strength; (2) complete equipment so that the tanks can be economically made, and (3) experienced workmen, as tank manufacture is an art in itself. Fairchild has this combination and specializes in plate tanks, welded aluminum tanks and riveted duralumin tanks.

The welded aluminum wing gas tanks in the Sikorsky S-35 were built by Fairchild.

Our tank engineers will submit designs and estimates on any type of tank work or quote on your designs without obligation. We probably can make your tank both lighter and cheaper.

Fairchild Airplane Manufacturing Corp.
Farmingdale, L. 1. A subsidiary of

#### FAIRCHILD AVIATION

CORPORATION

# MACWHYTE



In the S-35

Long experience demonstrates that planes gain

10% or more in flying efficiency when rigged with Macwhyte Streamline Tie Rods, which reduce wind resistance to the absolute minimum. Great tensile strength insures safety. These are the reasons why the giant Sikorsky S-35 is completely equipped with Macwhyte Streamline Tie Rods.

Our exhibit at the National Aircraft Show, Sesquicentennial Exposition, includes both Streamline Tie Rods and the new Macwhyte Round Tie Rods for fuselage and internal bracing.

We invite you to inspect these latest developments in airplane rigging.

treamline

Macwhyte Company,
1200 Racine Ave., Kenosha, Wisconsin

# TIE RODS





were the first to fly across the Atlantic on the U. S. Navy N. C. planes in 1919.

They have maintained their lead ever since and so it was only natural that they should be selected for exclusive installation on the Sikorsky S-35.

Jones Tachometers are used as Standard Equipment by the largest commercial aircraft builders in America.



The Transatlantic Sikorsky S-35

Consolidated Instrument Company of America, Inc.

41 East 42d Street, New York City



#### The Transatlantic Sikorsky Airplane

Dayton Wire Wheels are used on the transatlantic airplane S-35 designed and built by the Sikorsky Manufacturing Corporation. The utmost care was exercised in the selection of Wheels to support this giant airplane and the natural choice was



THE DAYTON WIRE WHEEL CO., Dayton, Ohio

### The Dole Double Compression Coupling

A perfect reconnectable joint for air, oil and gasoline lines.

Makes two complete joints guaranteed against leakage under all service conditions.

Write for price list and free cut-out sectional sample of the Dole coupling.



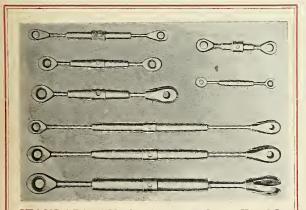
Used on the Sikorsky S-35 Transatlantic type airplane.

Note joint where tube is compressed. The compression seats tube end in the V slot.

Send a sketch or blueprint of your layout for our advice without cost.

DOLE DOUBLE COMPRESSION COUPLINGS carried in stock in sizes up to ½" o.d. tubing. Larger sizes to order. Let us know your needs.

THE DOLE VALVE COMPANY, 1923-33 Carroll Ave., CHICAGO, ILLINOIS



### STANDARD AUTOMATIC PRODUCTS CO.

ORIGINAL MANUFACTURERS OF

STANDARD TYPE TURNBUCKLES

Airplane parts of merit

TURNBUCKLES, CLEVIS ENDS CLEVIS PINS, AIRCRAFT BOLTS

(milled from bar)

THE SIKORSKY TRI-MOTOR AIRPLANE S-35 CARRIES OUR TURNBUCKLES

We furnish these regularly for all SIKORSKY airplanes.

Direct Contractors to United States Army and Navy and many airplane manufacturers

STANDARD AUTOMATIC PRODUCTS CO.

Corry, Pennsylvania

### AERO SUPPLY MFG. CO., INC.

OΕ

COLLEGE POINT, L. I., N. Y.

Have Furnished

SIKORSKY MANUFACTURING CORPORATION

zerith.

Aircraft Bolts - Nuts - Screws Cable - Turnbuckles - Shackles Tierods - Tubing - Strip Steel Dural Parts - Clevis Pins, etc.

We Solicit an Opportunity to Serve You in Like Manner

VISIT US AT

22nd St. & 3rd Ave., College Point Long Island, New York

### "EVERCHARM" REED and FRENCH CANE CHAIRS

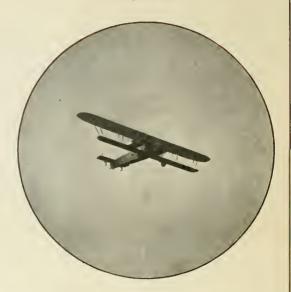
were the choice of Mr. Sikorsky in equipping the triple-motored transatlantic airliner S-35.

The cabin of this famous plane was decorated by well known and expert decorators and "EVERCHARM" chairs were selected to harmonize with the luxurious interior not only for their beautiful appearance and absolute comfort, but also for their

### INHERENT LIGHTNESS

Aircraft manufacturers are cordially invited to write for catalogs and estimates on special orders.

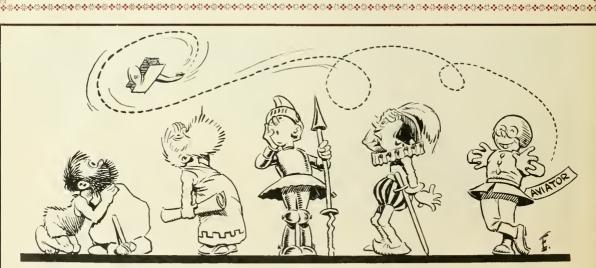
"EVERCHARM" furniture is manufactured at our own factories in Reed, Cane and Willow for every purpose and occasion.



### GRAND CENTRAL WICKER SHOP, INC.

"Largest Wicker Shop in America"

226 E. 42ndSt., New York City



### WHAT IS IT ALL ABOUT?

The man on the extreme right KNOWS. If YOU don't you SHOULD.

AERO DIGEST publishes authentic articles monthly on world-wide aeronautic developments. SUBSCRIBE NOW!

### **AERO DIGEST**

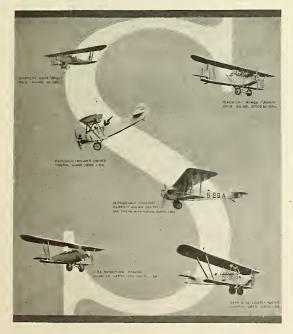
220 West 42nd St., New York City

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We are pleased to announce the completion of the seventh type of Sikorsky plane, the S-35. This is the largest American air transport built for passenger and freight service. Your inspection is invited.





Six successful types of Sikorsky ships are well known for their excellent performances. The new S-35 is the seventh type designed and built to meet the exacting requirements of hard commercial service.

### SIKORSKY MANUFACTURING CORPORATION

250 West 57th Street, New York, N. Y.

Field, Westbury, L. I.



The

AERO DIGEST will award a prize of \$5 each month for the best joke published. Only jokes pertaining to the aircraft field will be considered. Address the "Picked From The Air" Department, Aero Digest, 220 West 42nd Street, New York, N. Y.

Kelly Townsend, Riverside, California won the prize for September with the following:

Rastus: "I joined the army as an aviator the other day and the pilot took me up in his plane and the thing blew up and fell—the wings were lying here and the pilot was there."

Sam: "And where were you lying?" Rastus: "Oh, me? I was lying all the time."

That Prince of Wales is a lucky bird. Suppose, for instance, that he had taken up aviation.

-Davenport (Ia.) Democrat.

On the evening of July 5th when the N. A. T. mail plane landed in Moline, Ill., the plane was carrying a passenger. The passenger left the mail compartment immediately after the plane had stopped. Neither the pilot nor the man who places the mail in the plane saw the passenger depart from the plane.

The man was about to place the mail in the plane and noticing that the passenger wasn't in the plane, immediately asked the pilot, "Where is your passenger?" The pilot, evidently thinking that he must have lost him, raised up from his cockpit very excitedly and replied, "Isn't he in there? He was there when I left St. Joseph, Mo."

A great roar of laughter came from a crowd of about four hundred which had gathered to greet the Air Mail.

' lifford Lodina.

At the recent anniversary celebration of the Imperial Airways at Croydon Airport, England, four new Handley-Page machines were christened by the wife of the Air Minister by pulling in each case a rip cord which revealed the name of the new plane painted on the nose of the fuselage. The names of three planes fitted with "wet" (water-cooled) engines, turned out to be British colonial cities, such as "Ottawa", and "Pretoria". The fourth plane was fitted with "dry" (air-cooled) engines. As the name was revealed

to be "City of New York", a loud laugh arose from the crowd

"When every kind of flying machine has gone over the Pole, the only thrill left will be in going under it in a submarine."

-Brooklyn Faale

"Well, the subdivider follows the flag, and we must expect any day now to hear that some forward-looker in the Arctic is opening up his Gumdrop Gables development. -Detroit News.

"It is only a short distance to the North Pole as a Byrd flies."

"During the War an American aviator was attached to a French squadron. The French aviators had a banquet and the American was present. They thought they'd play a trick on him so they made some little balls of cup grease and put a layer of paté de foie gras on them. He ate several of them quickly and then made a wry face. Everybody laughed and someone said: "Ha, you've eaten cup grease!" He replied, "Yeah, I know it but what in heck was that stuff you put on it?" -Wichita Eagle.

Bessye: "Why do you say you are not going to go up with Frank in his airplane any more?"

Tessye: "Oh, he's so areo—naughty!"

-Mont Hurst.

Curtiss Boeing: "We need two first class hangars at our flying field."

Flossie Florrie: "Oh! I'll make them for you tomorrow -a pink one and a blue one." -Marie Snow.

Mamie: "Why did dad insist on taking that Army aviator with him to see downtown New York?"

Jamie: "So he could tell the folks back home he'd 'taken a flyer in Wall Street."

Aviation Cadet: "I'm getting on to the aerial vernacular rather slowly. What are these struts I hear them talking about?"

Sergeant: "Struts? That's what the second looies are full of."

Stowaway: "Darn it! If I'd known this was a North Pole airplane I wouldn't 'a' hooked a ride!"

—Judge.

-Army & Navy Journal.

# THE ADVANCE AIRCRAFT COMPANY

largest producers of commercial aircraft in America announce price reduction on the improved

WACO-9

three-seater

**\$ 2 2 5 0** at Troy, Ohio

More WACOS are now in service for profit and pleasure than all other ships now in production in America.

# THE PERFORMANCE MADE THE DEMAND

Write for details

THE ADVANCE AIRCRAFT COMPANY TROY, OHIO

# WITH the INDUSTRY



The Napier-engined Heinkel H. E. 5 seaplane, winner of German competition.

#### NAPIER "LION" ENGINE

FIRST place in the German Seaplane competition, recently held at Warnemünde, was won by the Heinkel H. E. 5 fitted with a British-built 450 h.p. Napier "Lion" engine. The Heinkel monoplane was the only seaplane to finish without repair and penal point. This is another proof of the reliability of the Napier engine.

It is significant as showing the reputation of this engine in the British Royal Air Force, that when it was decided to make a long distance Service flight from Cairo to Cape Town and back with four machines, Fairey airplanes were selected, each fitted with a single 450 h.p. Napier engine.

The Napier "Lion" has run many hundreds of hours on official type tests for the British Air Ministry. These tests are of a particularly strenuous nature, consisting of ten non-stop periods of ten hours' duration each at 2,000 r.p.m. and finishing with a run of one hour at full throttle as well as slow running and acceleration tests.

This engine has many achievements to its credit for duration flying, high speed and general reliability. Perhaps its most famous is when Commandante Franco flew a Dornier Wal machine, built in Italy and fitted with two Napier engincs, from Spain to the Argentine, covering the distance of 6,259 miles in 59½ hours' flying time. This flight was accomplished in a scries of long hops. On this flight, the South Atlantic was for the first time crossed with a single machine, and a non-stop flight of 1,440 miles was made across the ocean. During the whole time the engines gave not the slightest trouble.

Another long distance flight was that of Major Zanni, the Argentine airman who flew a Fokker machine with Napier engine from Amsterdam to Tokio, a distance of 10,000 miles, accomplishing the flight in twenty-two flying days.

On commercial service, the Napier has an enviable record. Imperial Airways have twenty of these engines in use on their Con-

tinental Air Services. An aggregate of over 2,000,000 miles has been flown with these engines, one alone having covered nearly 200,000 miles.

The Napier also holds the British speed record. This was with a Supermarine seaplane, the speed achieved being 226.752 m.p.h. The last three Aerial Derbys, the fastest air race in England, have been won with Napier-engined Gloster machines.

### CONTINENTAL MOTORS CORP. AIR SERVICE

THE Continental air service, between the two plants of the Continental Motors Corp., located in Muskegon and Detroit was officially opened on July 23. Their airport at Muskegon was also dedicated on that day.

Eleven airplanes, including the sevenpassenger, three-motor, Fokker monoplane, six single-seater P-14 Curtiss Army pursuit biplanes, two double-seater O-1 Curtiss observation planes and one Douglas C-1

transport plane with seating capacity for four passenger, pilot and mechanic, left Detroit at 10 a. m., for Muskegon and were joined in Grand Rapids by a Super-Swallow commercial biplane from Kalamazoo. The Continental plane, piloted by Lieutenant G. R. Pond, covered the 200 miles to Muskegon in one hour and fifty minutes with Ross W. Judson and W. R. Angell, president and vice-president of the Continental Motors Corp., Harold H. Emmons, president of the National Airways Corporation and Congressman John B. Sosnowski of Detroit.

More than 15,000 people attended the dedication and witnessed the aerial circus put on in connection with the dedicatory ceremonies. Major Thomas Lamphier, Commandant of Selfridge Field was in charge.

#### SPERRY BEACONS FOR NEW AIR ROUTES

THE new air routes are to be equipped by the Department of Commerce with Sperry beacons, an order for ninety of which has just been placed with the Sperry Gyroscope Company. These lights are of the incandescent twenty-four inch type, and are made of cast corrosion-resisting aluminum alloy, thus combining strength with extreme lightness. They are provided with a lamp changer which automatically swings a new lamp into focus in case the one in use burns out. This is considered an extremely important feature in assuring continuous and reliable operation of these beacons. A finely ground glass parabolic mirror insures the maximum efficiency of the light. By means of a motor built into the base, the light is rotated at the rate of six times per minute, thus making the powerful beam visible to the airman at a distance of twentyfive to fifty miles from all points of the compass



Officials at the opening of the Muskegon-Detroit Continental Air Service.

(Left to right)—Cengressman Carl E. Mapes, Grand Rapids; Congressman John B. Sosnowski, Detroit; James C. McLaughlin, Muskegon; V. M. Smith, works mgr. of Detroit Continental plant; W. R. Angell, vice-pres., Ross W. Judson, pres., and W. P. Ellis, ass't advt. mgr. of Continental; Harold H. Emmons, prec. of National Airways Corp.; M. Hunter, and A. R. Kelso. works mgr. of Muskegon plant.

# 'AIRCO'

### TWIN-MOTORED AMPHIBIAN

Built by the Sikorsky Manufacturing Corporation
"SAFETY FIRST" ON LAND, WATER AND AIR



Four and six-passenger models closed and open

Operators of successful air lines consider maximum safety, comfort and luxury for their passengers. The AIRCO Amphibian incorporates these factors to the highest degree, at a fair purchase price.

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AND KAUFMANN & BAER COMPANY, Inc., PITTSBURGH, PA.



Newly designed Standard J1 Commercial planes are now in full production by the Nicholas-Beazley Co., Marshall, Missouri.

### NICHOLAS-BEAZLEY'S NEW COMMERCIAL SHIP

A NEW Standard J-1 commercial ship built up of Standard J-1 material has been designed and is being produced by the Nicholas-Beazley Airplane Company of Marshall, Missouri. In this little ship, built up with four Standard J-1 lower wing-panels, the fuselage has been redesigned and shortened considerably and the ship lightened until the total weight empty is only 1275 pounds. Curtiss OX5, OXX6 or Hispano-Suiza motors can be installed as desired in these ships.

The general dimensions are as follows: span over all, 31' 6"; chord, 6'; gap, 6'; dihedral angle, 0 degrees; sweepback, 5 degrees; stagger, 7".

Weights with OX5 motor: empty, (without water, gas or oil), 1275 lbs.; fuel, 285

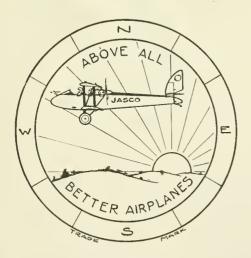
lbs.; pilot, 170 lbs.; payload, 400 lbs.; total weight, fully loaded, 2130 pounds.

The following is the performance with OX5 motor: maximum speed, 85 m.p.h.; cruising speed, 75 m.p.h.; landing speed, 30 m.p.h.; climb in ten minutes, 3000 feet. Radius of operation, about 350 miles. Ceiling, 12000 feet.

Although this ship is built of war-production material it compares favorably with some of the new production ships, and is one of the most proficient war-production airplanes on the market today. It has a very quick take-off and will carry a full tank of gas, pilot and two passengers with the OX5 motor and handle it very nicely. It has adequate control in the air and makes a very nice little stunt ship. It can be looped with practically no loss of altitude, and snaps out of a spin very quickly. The landing speed

is low and the ship flies nicely in rough air.
Eddie Heath of the Heath Airplane Company of Chicago flew one way from Marshall, Missouri, last month and is high in his praise of it.

The Nicholas-Beazley Company is starting out on a new sales venture. One of their pilots and salesman, Charles Peeples, with one of the new commercial ships, is carrying a complete line of samples of all new-production airplane parts, accessories and supplies, including dope, cloth, wing covering, tape, instruments, in fact everything for a dealer's complete stock. Mr. Peeples will travel from coast to coast and from the north boundary to the south boundary of the United States. He is going to call on dealers throughout the country and not only demonstrate and show the little ship but act as a salesman for the Nicholas-Beazley Co.



Send ten cents for illustrated catalog of material in stock.

### Smooth Sailing

Without a worry, if you use new and inspected aircraft material as sold by Johnson Airplane and Supply Company.

An organization of experienced pilots, engineers, designers and skilled workmen.

A plant (40,000 feet floor space) with every facility to build airplanes in wood or

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Distributing thousands of other items to the designer, builder and user.

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### PRODUCTION MAKES IT POSSIBLE

\$2495 F.O.B. Factory Flying Field

The famous five-passenger L.S. 5 at less than the price of the average OX-5 jobs EQUIPPED WITH 150 h.p. HISPANO MOTOR

\$2495 F.O.B. Factory Flying Field



### FROM THE FACTORY DIRECT TO YOU

A DEPOSIT of \$500 will hold one of these jobs for 60 days. Characteristics of the new L. S. 5: All Haskelite veneer fuselage. 45-gallon veneer-covered center-section tank. Steel landing gear. Steel balanced rudder and flippers. Beautifully upholstered in leather. Semi-cabin passenger cockpit seat-

ing four passengers. Hamilton propeller. Wings, P. A. F. 3 type, all new construction, covered with long fiber cotton, finished with six coats of pigmented silver or gold bronze nitrate dope. Side type radiators with cartridge core. Outside oil radiator. Equipped with the 150 h. p. Hispano-Suiza motor.

The New L.S. 5. Easy to Buy and Easy to Fly. Most for the money. Write now for catalog.

### Lincoln Standard Aircraft Company

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### SCOUT BUILDS MODEL

E AGLE Scout Arthur Boshen, 16, of Camp Chappegat, the Westchester, N. Y., unit, constructed a model of the "Josephine Ford" airplane which he presented to Commander Byrd during the annual inspection of the Boy Scout Camps last month. Eagle Scout Boshen built the model in two days in the Kanohwahke ship model shops, one of the Boy Scout Foundations' vocational activities at the Kanohwahke Scout Camps.

As the guest of Barron Collier of the Executive Board of the Boy Scout Foundation, G. F. McLaughlin of Aero Digest visited the model shops where the boys have built over 100 ship models of every description this season, under the supervision of Captain Herbert Saunders, former U. S. Government model expert. Mr. Collier is now considering a suggestion of the Aero Digest that it increase this activity next summer to include the building of airplane models by scouts.

### MacCRACKEN MADE HOOVER'S AIR AID

WILLIAM P. MACCRACKEN, JR., of Chicago, Secretary of the American Bar Association and Chairman of the committee on aeronautical law, was appointed by President Coolidge, on August 9, to be Assistant Secretary of Commerce in charge of civil aviation. Among his duties will be the charting of air routes, lighting airways, and working out the new laws necessary to the development of commercial aviation.



Byrd receives a model of his polar airplane made for him by a Boy Scout.

### COURSES AT N. Y. U.

THE Evening Engineering Division of New York University is offering two evening courses in aeronautics during the coming academic year.

In the first term, October to February, a course will be given in the Elements of Aerodynamics and Airplane Design, comprising fifteen two-hour lectures every Monday evening.

In the second term, February to May, a course of fifteen two-hour lectures will be given in Industrial Aviation.

Further particulars may be obtained from the Director of Evening Engineering Courses, New York University, University Heights, New York City.

### WRIGHT DINNER FOR BYRD AND BENNETT

THE Wright Aeronautical Corporation formally welcomed Commander Richard E. Byrd and Pilot Floyd Bennett home with a dinner at the New York Yacht Club on August 20. The dinner was tendered in commemoration of the North Pole flight with three Wright Whirlwind 200 h.p. aircooled engines.

### ALTOONA-TYRONE AERO CLUB AND AIRPORT

FLYERS are invited to use the Altoona-Tyrone Airport, especially those enroute to the National Air Races at Philadelphia. Gas, oil, water, etc., can be secured there and all assistance possible will be given.

The field, thirty acres in area, is located nine miles east of the city, between the Pennsylvania Railroad and the William Penn Highway. It is 1500 yards east of the Altoona Speedway which serves as an excellent marker. It is marked by a large white

The Altoona Aero Club, which established this field, was organized in January, 1926. A short time ago the town of Tyrone, five miles east of the field, joined them and the club is now known as the Altoona-Tyrone Aero Club, and the field as the Altoona-Tyrone Airport.

Among the local flyers who use the field are: Ralph Haynes, Ralph Dodson, Earl Fasick and Henry Milton.

### LEARN TO FLY

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Room and board near field at \$10 per week

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The flying school of the Rohertson Aircraft Corporation is one of the oldest and best known in the United States. Our instructors are ex-army aviators and mail pilots with wide experience. Our equipment is the best obtainable. In over eight years of operation

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#### 76 Students Graduated in 1925

our students have never damaged a ship in their solo flights. The flying field is approximately six miles from St. Louis and is easily accessible by railroad, street car and hard-surfaced roads. It is the largest and best privately owned field in the country. The International Races of 1923 were held there, Mail planes arrive and leave daily.

Our course requires about two weeks, depending on the individual, and after its completion the refinements of the art can be gained only from experience. Commercial aviation is rapidly growing.

Don't Delay! Enroll Now

It is not necessary to purchase an airplane in order to take this course

AIRPLANES FOR SALE. We have airplanes ready for immediate fly-away delivery at prices ranging from \$650 to \$1750.

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Noted Transatlantic Pilot and Aerial Explorer

AVIATION has made such definite advances and has become so vitally important in the progress of world affairs that the United States Government is arranging to provide full aerial navigation facilities similar to those which are maintained for our shipping industry.

Air transportation is one of the biggest factors in peace time commerce and its rapid development means that hundreds of opportunities are now awaiting young men who will train for the big jobs to be filled.

### TRAINED MEN ARE NEEDED IN THE AIR!

The aircraft industry is one of the most highly specialized industhe most nighty specialized industries of the twentieth century. Men must be specially trained by study and experience before they can qualify for the responsible positions available.

Aside from the fact that it is remunerative, the aircraft business is undoubtedly the most interesting in the world. More than that it offers a career of action and accomplishment wherein you will have full opportunity to reach the top of an uncrowded profession.

The Aviator's Preparatory Institute was organized and is conducted by experienced aviators who



realize the importance and necessity of training before you can direct the operation of aircraft.

Students who desire to take the courses of training offered by the Institute will appreciate the advantages of receiving instruction under the personal supervision of Lieutenant Walter Hinton who was the pilot of the NC4, the first airplane to cross the Atlantic Ocean.

The specially arranged courses in training offered by the Aviator's Preparatory Institute are as complete and thorough as those which every officer in the United States Army and Navy must take before he is permitted to fly.

Walter Hinton, formerly U. S. Naval Aviator, pilot of NC4, first flying machine to cross the Atlantic. 1917-18, instructor in the operation of large airplanes, Naval Flying Base Pensacola, Fla. Auzust, 1918, senior seaplane pilot in charge flight operations, U. S. Naval Air Station, Halifax, N. S. May, 1919, a pilot of NC4 in transatlantic flight followed by 10,000 mile demonstration tour in the waterways of the United States. 1922-23, flight New York to Rio Janeiro. 1924, aerial exploration and mapping of South American jungles with Hamilton Rice Expedition.

### Outline of Home Study Course Now Available

The home study course of the Aviator's Preparatory Institute is divided into 16 lessons, each covering one subject thoroughly. It is clearly printed, attractively bound and fully illustrated with 216 drawings and sketches. After thorough discussion on each subject, questions are given to be answered by the student whose proficiency upon completion of the course is attested to in the form of a special certificate. The subjects covered in the course are:

- 1. Aviation History
- Aviation Nomenclature
   Airplane Construction
- 4. Airplane Rigging
  5. Aircraft Instruments
- 6. Aircraft Engines
- 7. The Liberty Engine 8. The Hispano-Suiza Engine
- 9. Ignition
- 10. Carburetion
- 11. Aerostatics12. Theory of Flight
- 13. Aerology
- 14. Air Navigation
  15. Modern America Aircraft Engine Development
  16. Practical Flying Instruction

### Aviator's Preparatory Institute

WALTER HINTON, Pres.

475 FIFTH AVENUE, NEW YORK CITY

When you go to the National Aircraft Show and Air Races at the Sesqui-Centennial in Philadelphia—September 4th to 11th—be sure and see the NC-4 in the Transportation Endiang; and visit the Aviator's Preparatory Incitude exhibit. Lieut. Walter Hinton will be present in person on the above dates.

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ABOVE—Travel Airplane with Wright J-4 engine. This type, equipped with Pioneer Navigating Instruments, won the Ford Reliability Tour and will be flown in the National Air Races.

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#### MEMPHIS AIRPORT

THE Memphis Airport is the official and municipal landing field of Memphis, Tennessee. It is located about six miles north of Memphis, at Woodstock, Tenn., and is an easy field to find from the air as it is bordered on the east by the Illinois Central Railroad and on the west by a paved highway. The hangars and other buildings are painted white so as to be a landmark for visiting flyers. The field is 3,300 feet long east and west and 3,800 feet north and south, in the shape of a cross, through a 180-acre tract of land. The runways are 650 feet wide. There is hangar space, a restaurant and a gas and oil service station.

The airport is the result of the untiring efforts of the Memphis Aero Club which is composed of ex-army flyers. With the help of the Shelby County officials the club has graded and worked the field until it is one of the best in the South. The surrounding emergency fields are numerous—directly across the I. C. R. R. tracks is the old cross-country field of the U. S. Government during the war.

Edwin Williams, chairman of the Aviation Committee of the Memphis Chamber of Commerce, (the other members being Postmaster Sol Seches and Louis Carruthers), last fall was designated to secure a landing field for Memphis. His first step was the formation of the Memphis Aero Club, the directors of which are: Everett, Cook, president: Louis Carruthers, vice-president; Lacy Whitten, secretary; Robert Haverty, treasurer; Ed-



Alfred V. Verville, designer of the Buhl-Verville Airster and many other successful commercial and military airplanes.

win Williams and W. Percy McDonald.

The Memphis Airport is the home of the Memphis Airport Co., Lieut. V. C. Omlie, former army flyer, being in active charge of all operations consisting of service for visiting flyers, cotton dusting, aerial photography, aerial surveys of all kinds, aerial taxi to any place in the country, exhibition work, passenger carrying, and a complete flying school. They are also the distributors for the Waco.

The transportation facilities are good.

### PARKER RELIEF PILOT ON BYRD EXPEDITION

In the May issue of Aero Digest R. C. Ortel was mentioned, in the article "Byrd Flies North," as the relief pilot of the Byrd Polar Expedition. This was an error, as Lieut. Alton N. Parker, U. S. Marine Corps Reserve, was the official second pilot on the expedition.

### CURTISS EXHIBIT AT SESQUICENTENNIAL

THE Curtiss Aeroplane and Motor Company has arranged an interesting historical exhibit in the National Aircraft Show which is being held in the Transportation Building at the Philadelphia Sesquicentennial.

The exhibit includes the motorcycle with which Glenn H. Curtiss established a record of 137 miles an hour in 1907; an antique Curtiss "pusher" machine of the vintage of 1911; a duplicate of the 1925 Pulitzer racer, stripped to show constructional details; and a modern Curtiss "Hawk" pursuit plane. In addition there is a complete display of Curtiss-Reed metal propellers, models of famous Curtiss machines, trophies, and pictures of Curtiss planes and equipment.

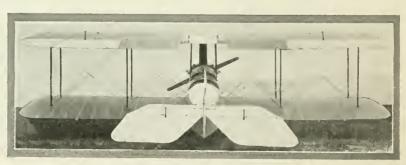
The exhibit will remain in the Transportation Building until after the National Air Races which end on September 11th. Since the Air Races are held only in the afternoons, aviation enthusiasts will have an excellent opportunity to visit the aircraft show in the worning.

### THE NEW STANDARD J1 COMMERCIAL AIRPLANE



Designed and assembled by Nicholas-Beazley Airplane Co.

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Send deposit by letter or wire for immediate delivery.



W E recommend the Standard J1 Commercial to be the best all-purpose commercial ship on the market today. It embodies pleasing appearance, nice performance, large pay load, quick take off, rapid climb, exceptionally slow landing speed, good top speed and excellent maneuvering qualities, especially in windy weather.

All wings have beautiful brand new cotton or linen, natural finish. The entire ship is new and has never been flown. Assembling from war surplus materials allows us to furnish this ship at a remarkably low cost. Complete fuselage, tail assembly and ailerons are finished with the best grade mercerized cotton and six coats best quality new production aluminum pigmented dope.

Span over all (upper and lower wings) 31

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field, flight tested.

ft. 6 in.; gap 6 ft.; dihedral 0 degrees; sweepback 5 degrees; stagger 7 inches; weight with OX5 motor (empty without fuel, oil or water) 1275 pounds; fuel 285 lbs.; pilot 170 lbs.; pay load 400 lbs.; total weight fully loaded 2130 pounds.

Performance with OX5 motor: maximum speed, 85 m.p.h. Cruising speed, 75 m.p.h. Landing speed, 30 m.p.h. Climb in 10 minutes, 3000 ft. Radius of 350 miles. Ceiling 12000 ft.

We are assembling about 75 of these ships from our immense war surplus stock. Most of them are being purchased by old experienced pilots.

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Cam shaft covers	2.50
Model A rods, per pair	7.50
Model I rods, per pair	15.00
Model E or Model I rod bearings	6.00
Zenith carburetors	30.00

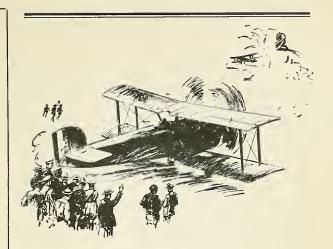
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Plain connecting rod	3.00
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We can supply any part for OX5, OXX, Hisso or Liberty motors at corresponding prices.

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DICTIONARY OF AVIATION

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Ballows, Archine Level Meshanical Flight;
Bright; Mings and Tails of Birds, Insects, Bats,
Flying-fishes; Aerostatics and Aerokinetics;
Streamline Bodies, Aerofolis; Meteorology; Westher, Clouds, Fogs, Storms, Winds, Cyclones, Rain,
Snow, Hall, Dust, Rainbows, Sunets, Hsice, Auroras, Lightning, Pressure, Temperature, Humidity, Instruments, Clinatology, Astronomy,
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### MFRS. AIRCRAFT ASS'N ELECTS STOCKHOLDERS

T the annual meeting of the Manufac-A T the annual meeting of the Adams Aircraft Association, Inc., the following officers and directors were elected: F. H. Russell, pres.; G. L. Martin, vicepres.; C. L. Lawrance, treas.; C. M. Vought, secv.: S. S. Bradley, asst. treas. & gen. mgr. The directors in addition to above are:

G. P. Tidmarsh, A. J. Elias and Donald Douglas.

### DUCO NOT LACQUER

DUCO is a new and exclusive product of the du Pont lahoratories and not an imitation or improvement on previously existing finishes. In a recent issue of an automotive trade journal there appeared a reference to "Duco Lacquer." There is a distinction between the two finishes, and therefore it does not belong in the same category, nor is it a general term for a type of a finish.

### AERON'L CHAMBER OF COMMERCE OFFICERS

A<sup>T</sup> the fifth annual meeting of the Aeronautical Chamber of Commerce of America, Inc., the following officers and governors were elected: president, Col. Paul Henderson; 1st vice-pres., F. H. Russell; 2nd vice-pres., F. B. Rentschler: 3rd vicepres., R. H. Fleet; treas., C H. Colvin; secy., C. T. Ludington; asst. treas. and gen. mgr., S. S. Bradley; asst. secy., O. A. Shan-

The Board of Governors in addition to the above are: C. L. Lawrance, Grover Loening, Donald Douglas, A. V. Verville, L. D. Gardner and R. G. Thach.

### FLIGHTEX FABRIC FOR AIRPLANE COVERING

F LIGHTEX Fabric is being used extensively for covering the wings, fuselage, and tail surfaces of planes. This fabric is made of the finest grade, long-staple cotton. mercerized, and woven on the most up-todate looms. Tests and inspections of the cloth made by the Inspector of Hull Material for the Navy and also by the Engineering Division, U. S. Army, at McCook Field have shown that this fabric averages from 10 to 20% greater strength than required by Air Service specifications.

E. S. Twining & Co., of New York, who have the exclusive sale of this Grade "A" airplane fabric fully guarantees it to meet required specifications.

#### CIVIL SERVICE EXAM.

FOR ASSOCIATE INSTRUMENT ENGINEER

THE United States Civil Service Commission announces an open competitive examination for associate Instrument Engineer to fill a vacancy in the Air Service, Mc-Cook Field, Dayton, Ohio, vacancies in the Bureau of Standards, Department of Commerce, Washington, D. C., and vacancies occurring in positions requiring similar qualifications. Applications must be on file at Washington, D. C., not later than Sept. 28.

"INSURANCE

### AVIATION INSURANCE

is now another one of our special lines.

CORNWALL & STEVENS 110 William St. New York

MATERIALS"

### SEAMLESS STEEL TUBING

Made to meet aircraft conditions by suppliers to the most successful airplane builders of America, England and the Continent.

ACCLES & POLLOCK, LTD. OLDBURY, ENGLAND U. S. A. Representatives:
JONAS B. OGLAEND, INC.,
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AERO Colored Enamel



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FLEXIBLE



IDEAL AERO & SUPPLY CO.

165 Spring Street New York

Air Specification No. 10225 D

#### SEAMLESS STEEL

### TUBING

Complete warehouse stock available for immediate shipment in any quantity.

Service Steel Co. 1435 Franklin St., Detroit, Mich.

For Aircraft Manufacturing Re-inforcing tape, Packing Tape, Shock Absorber Cord, Radiator Web Manufactured to Army and Navy Specifications

RUSSELL MANUFACTURING COMPANY Middletown, Conn. Sales Office: 349 Broadway, New York

MODELS "

### Model Making and Experimental Work

On Large and Small Airplanes
The only properly equipped and specialized factory in this country devoted to model airplane experimental work, model making, etc. Write us for cost estimates on your work.
Largest and most complete catalog of Model Airplanes, Parts and Supplies. Sent postpaid for five cents in stamps.

Ideal Aeroplane & Supply Company,
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Manufacturers of Model Airplanes
Parts and Supplies
Established 1911

15 years experience

Say you saw it in AERO DIGEST

### AIRCRAFT



### SUPPLIES

UR customers know about the large volume of JN and OX spares we have on hand. For the benefit of prospective customers, we wish to state that we lease a warehouse of 20,000 square feet capacity and that it is practically full of this material. We have the largest and most complete line in the country.

To introduce ourselves to new customers and expand the volume of our business we make our

### SPECIAL OFFER

Ten per cent off and no crating charges on all plane parts, except rubber and wheels, during the entire months of August and September, guaranteeing immediate shipment. The motor parts are net, except on special quotation on quantity orders. You can't afford to miss this offer. Send for Catalogue No. 3 and order according to these terms for prompt and efficient service.

### -MONUMENTAL AIRCRAFT, Inc.-

1030 Calvert St., Baltimore, Md. "THE LEVIATHAN OF THE AIRCRAFT FIELD"

### ELECTRICITY FOR BEACON LIGHTS RELIABLY MADE BY WIND POWER



at U. S. Air Mail Emergency Landing Field, North Aurora, Itl.

DEPENDABLE—SAFE—ECONOMICAL

The HEBCO Special Dynamo is unequalled in its ability to generate large current output.

Correspondence invited appertaining to equipping fields and air lanes.

HERBERT E. BUCKLEN CORPORATION ELKHART, INDIANA, U. S. A.

You Can't Lay It Down Till You Finish It!

General William Mitchell formerly Asst. Chief, U. S. Army Air Corps:

"Just the kind of authoritative information on aeronautics needed by the youth of America."



Major H. H. Arnold

### Airmen and Aircraft

An Introduction to Aeronautics

By Henry H. Arnold, Major, Air Corps, U. S. Army

JUST published—a remarkable story of desire, failure, and doubt in the attempts at human flight changed to realization in our own generation.

Types of aircraft and why they fly—their commercial and military future. How airmen are made—synopses of the complete courses of the Army and Navy flying schools

The book you want in this age of air "flivvers," polar flights, and ocean airways, to view the illimitable opportunities of the future. \$3.50.

A volume of the Ronald Aeronautic Library

The Ronald Press Company Publishers: 15 E. 26th St., New York

### NEW BIDS ASKED FOR AIR MAIL ROUTE NO. 9

POSTMASTER GENERAL NEW on August 17 accepted the 45-day notice of discontinuance tendered by Charles Dickinson, contractor on air mail route number 9, Chicago, Ill., via Milwaukee and La Crosse. Wis., to St. Paul and Minneapolis, Minn., and immediately re-advertised for bids returnable Sept. 4, 1926, for the operation of the line

Asked for comment on the request of Charles Dickinson for a cancellation of his contract, Postmaster General New said: "The action of Mr. Dickinson illustrates ex actly what I had in mind in saying on two or three public occasions recently that the danger lay not in the Department's not going fast enough with the development of the contract air mail service but in going too fast.

"The Twin Cities very greatly wanted an air mail service and brought great pressure to bear to have such a service established with Chicago as the terminus of the line, advertisements were issued in accordance with the law and three bids were submitted. The National Air Transport Company was the highest bidder, offering to perform the service for 80 per cent of the postage. The next highest bidder was the Hamilton Aero Manufacturing Company, with a bid of 75 per cent of the receipts, while Mr. Dickinson's bid was only 48 per cent. When Mr. Dickinson accompanied his bid with a perfectly satisfactory bond and with every guar-



Henry Ford and the new Anzani-motored light monoplane which weighs 310 pounds.

antee of efficient performance the Department asked, it was obvious that the only thing the Department could do was to award him the contract."

#### THE ILLINOIS MODEL AERO CLUB

THE Illinois Model Aero Club was founded in January, 1912, to study and promote the science of aviation through the medium of the model airplane. This club was one of the first of its kind in the world. Since its organization it has steadily progressed until today it is the foremost club of its kind in the world, holding the ten recognized world's records for rubber-driven model airplanes.

It was due to the research work done by the members that the club was able to become owner of the Villard Trophy which was offered for competition during the years 1916, 1917. The competition was to continue through 1918, but due to the War it was discontinued. In 1919 the National Model Aeroplane Competition was resumed. This year the club won the trophy for the third time, thus becoming the owner of the

Though there was no national competition from 1920 to 1923, the members kept up the research work and improvement which is directly responsible for the success of the club in the Mulvihill Trophy contests of 1923, 1924, 1925. In the contest at St. Louis in 1923 the club was the undisputed winner of the contest over a large field. The club members won all eight prize places in the contest. The club was almost as successful at the 1924 meet in Dayton, winning the trophy and all prize places but one. It was at this meet that Robert Jaros, one of the club's foremost members, established under very adverse conditions the world's record of 10 minutes 14.4 seconds. Last year at New York the trophy was again won by the elub against a very expert field.

The Illinois Model Aero Club has been the center of the model airplane development since 1916 and is looked to by all the present clubs for information on design, construetion and flying of rubber-driven model planes. Information is gladly given to those who inquire for it, as the club was organized "to popularize and study the art and science of aviation through the model airplane." The club's address is Auditorium Hotel. Chicago, Illinois.



### LEARN to FLY



You Flv by Flying. THE

SWEENEY SYSTEM of Practical Airplane Mechanics

The Sweeney System

first prepares a atudent by intensive practical work on intensive practical work on motors, bullding, recover-ing wings, rigging and all details of construction, re-pairing and handling. This is called ground school work. To show you the quality of the men who teach you, look at Spencer and Wimer for instance. Spencer was an army pilot and has been teaching and doing com-mercial flying since 1917. Wimer is a college man, with the standard works. Wimer is a college man, went overseas, was with the 1st Air Park as an observer, spent over 200 hours in the air and since the war has been with two big aircraft corporations.

### Learn to Fly!

Aviation is no longer a mystery—no longer a hazard; no, it is a business, growing greater and more important; you can mecha: engineer, repair builder or a pilot. man, opena up a world of opportunities for young men.

The Sweeney System has no planes to sell, and
sticks strictly many the strictly open and strictly open and

The Sweeney System

is divided into two parts. First; You are thoroughly taught in the ground school. This fus you as an aviation mechanic you have a superstant of the second o worth of new material, and all types of enclines. Secondly: After completing this work if you want to be a pilot you take ten hours of flying Now when you understand that two to seven hours is all the average man needs to learn experi flying sail the average man needs to learn experi flying sail the average man needs to learn experi flying the sail of the sail that the sail tha

Send Name Today

for full details of this sviation mechanical course and photographs of planes and equipment actually used; also full information as to the commercial end of thying and opportunities for young men.



# ANNOUNCING

### The New Woodson Mail and Sport Plane

Divided axle with 8 ft. tread

Adjustable stabilizer and fin



Steel tube fuselage and tail

Excellent visibility

THE new Woodson Sport Plane, fitted with the Wright E-4 engine carries a pay load of 800 pounds and seats five passengers.

The power plant is removable as a unit, with radiator, oil tank, etc., attached to the mount. A change can be made to any of the following motors in 45 minutes: Salmson, Hisso, Wright J-4, Curtiss K or C-6, OX-5 or Liberty Six.

### PERFORMANCE-

With Salmson	. With 180 Hisso
Maximum speed135 m.p.h.Minimum speed45 m.p.h.Pay load800 pounds	Maximum speed         125 m.p.h.           Minimum speed         40 m.p.h.           Pay load         .700 pounds
With Wright J-4	With OX-5
Maximum speed	Maximum speed         90 m.p.h.           Minimum speed         38 m.p.h.           Pay load         350 pounds

WOODSON ENGINEERING CO., BRYAN, OHIO

#### NEW ENGLAND NEWS

By DANIEL ROCHFORD

BOSTON airmen are interested in the forthcoming National Aeronautic Association at Philadelphia. The trouble with the N. A. A. is lack of members. In New England we have but a few hundred and most of the actual flyers are not members. The reason for this is the five dollar a year dues. The Philadelphia convention should cut dues to \$1 per year and then go and line up all aviation fans, professional as well as amateur. If the local chapters want additional dues, let them charge another dollar. But \$1 a year to national headquarters is sufficient.

Bangor, Maine, has attracted several cross-country flyers this month. Colonial Air Transport sent a plane piloted by B. F. Billings of the Boston Airport Corporation, reserve air mail pilot, down with a load of merchandisc. Several army DHs have plunked in on the Bangor field. Local interest in aviation in Bangor is still too much the awe and wonder type to please serious commercial interests. But there is interest there.

The much-discussed air service to Mount Desert Island still awaits a private aviation entrepreneur who does not fear the fogs of that coastal district. Business is there, according to recent private assurances of Lowe Kimball, proprietor of Northeast Harbor's Kimball House, and other hotel and business leaders from Northeast and Bar Harbor.

Cape Cod has been visited regularly by

aircraft from Boston the past month. Mostly joy hops by National Guard pilots of the 26th Division who have summer places near Chatham. Two navy pilots fighting through a fog bank in a Loening Amphibian went into a spin at a low altitude and were killed in striking the water near Vineyard Haven early in the month. This unfortunate event marred an otherwise casualty-free flying month.

The Los Angeles flew over New England the middle of the month, calibrating compasses for a lot of naval stations. The writer chased it in an old Navy TG around Boston harbor and shared the spell-binding admiration its flight provoked in the minds of the thousands of New England citizens who saw it.

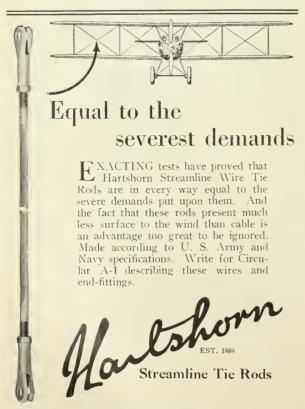
The Squantum Naval Reserve Air Station again reached one hundred hours aircraft flying time for the week of August 8-14. The total service time at the Boston Airport averaged 75 hours weekly this mouth.

Nineteen New England reservists went to Mitchel Field for active duty the past two weeks. They were: Captain Peter C. Borre of Boston, Lieut. William W. Batchelder of New Bedford, Lieut. Walter J. Klein of Brookline, Lieut. George H. Lusk of Brookline (Lusk is president of the New England Reserve Air Service Officers Association), Lieut. John H. Penick of Boston, Lieut. Milton A. Stone of Boston, Lieut. Byron R. Switzer of Medford, Lieut. Maurice J. Consell of Boston, Lieut. Archibald M. Denny of Hayvard, Lieut, Harold T. Gallagher of

Salem, Lieut. James A. Hearn of Springfield, Lieut. Frank D. Klein of Roslindale, Lieut. Horace H. White of Springfield, Sergeant William W. Currie of Somerville. From other states than Massachusetts the following also were at Mitchel: Lieutenant Bland D. Shuttleworth of Bennington, Vt., Lieut. Allan B. Stanhope of Niantic, Conn., Lieut. Charles W. Howard of Gardiner, Maine, and Lieut. Theodore W. Messinger of East Providence, R. I.

A Wright Whirlwind engine in a UO Vought seaplane at Squantum has been flown over 400 hours without overhaul by Lieutenant Reginald D. Thomas; station commander. Aviation Chief Pilot Hersie D. Jennings, of the same station, flew 104 hours in the month ending August 15. That sets a New England naval enlisted pilot record.

Work on the project for an airport in New Haven, Conn., has been furthered during the month by Ensign Joe DeGanahl, young Harvard graduate, commissioned in the naval reserve a year ago after completing the basic course at Boston and the advanced course at Hampton Roads, and bids fair to become a reality. Ensign DeGanahl broke two aviation records this spring. On three hours' notice he joined the Byrd Polar Expedition as a coal passer. At Spitzbergen he graduated to warming the motors for Byrd. He got in 90 minutes time at the controls of the Josephine Ford before the polar conquerors returned. The day after he landed in New York he got married. He is now back at work on the staff of the New Haven Register



STEWART HARTSHORN CO., 250 Fifth Ave., New York

### ALEXANDER EAGLEROCK

Places in First Eleven Ships and Wins Over All OX Jobs in the Ford Reliability Tour



R. R. Rolando, Pilot of the Eaglerock in the Ford Tour.

### ALEXANDER EAGLEROCK

at the National Mile High Air Meet—1st and 2nd places in the "Onto-Denver" race—1st and 3rd places in speed race under 100 h.p.—2nd place in altitude race over 100 h.p. (Winning with 120 h. p. motor over ships with 180 to 260 h.p. motors.)

Consider the performance and then the price— \$2475 - on DENVER FIELD

Dealers with demonstrator Eaglerocks on their fields:
Southern California—Aero Corporation of California, Los Angeles.
Northern California—W. L. Lanklin, Porterville, California.
Michigan -Niles Airways, Niles, Michigan.
Indiana—Captain J. A. Yonge, Gary, Indiana.
Illinois—Sievert Aircraft Corporation, Chicago, Illinois.

ALEXANDER AIRCRAFT CO.

402 DENVER, COLORADO
Associated with Alexander Industries

Room 402

# BOTH WINNERS

### PROTECTOR GOGGLES

### **NAVY-TYPE HELMETS**

The now accepted standard goggle for air pilots. The Protector has the largest vision range. Provided with locking adjustable bridge, guaranteeing perfect fit. Extra soft large rubber cushions assuring utmost comfort. Extra wide head-band. Dustproof non-fogging lenses. (Slightly tinted lenses 50c extra).

Junior Model Series 26, in in Metal Case real leather case



The illustration shows the Series 26 Protector Goggle in combination with our newest Navy Type leather helmet.

Made to the latest requirements of the U.S. Navy. Cut and sewed in longitudinal sections, they fit perfectly, leaving no gap at the neck or cheeks. Powder puff ear protectors. Only the finest soft sheep leather is used. Chocolate color. Entire helmet is lined with high-grade silk.

All sizes by eighths

### AIR TRANSPORT EQUIPMENT, Inc.

Telephone Westbury 376 CARLE PLACE, L. I., N. Y.

Next to Curtiss Field

NOOL TUBING seamless and welded

COLUMBIA

Woolworth Bldg., New York

PLANE BUY WORDS-

HAMILTON AERO MANUFACTURING CO. Milwaukee, Wisconsin

Say you saw it in AERO DIGEST

#### THE 1926 NATIONAL AIR RACES

(Continued from page 183)

for the use of mechanics who desire to be quartered at the field. The following events are scheduled:

#### SEPTEMBER 1-2-3

(A) "On to the Sesqui" Race for the Sesquicentennial Trophy offered by the Sesquicentennial Exposition for the permanent possession of the winner; also, \$4,000 in cash prizes. Civilians only.

(This contest is open to any make or type of aircraft, flying from a point 200 miles or more from Model Farms Field. All pilots must land at Model Farms Field and deliver their Log of Flight after 6.00 a. m. September 1, and before midnight September 3. Prizes awarded on total number of points according to: average speed based on total elapsed time; distance covered; passengers carried; and engine horse-pawer.)

List of entries:

Beeler Blevins
D. Mackay Solenberger
Arthur K. Killps
Robertson Aircraft Corp.
Austin R. Lawrence
Douglas H. Davis
Mayer Aircraft Co.
Joseph A. Dunkel
Ross Arnold
Wright Aeronautical Corp.
Harry J. W. Hiles
George Faw
Lloyd O. Yost

Atlanta, Ga.
Atlanta, Ga.
Lyon, Ill.
Anglum, Mo.
Dallas, Texas
Atlanta, Ga.
Bridgeville, Pa.
Bridgeville, Pa.
Lakewood, Ohio
Fort Worth, Texas
Paterson, N. L.
Gothenburg, Nebr.
Santa Monica, Calif.
Conynham, Pa.

Waco-9 (OX 5)
Waco-9 (OX-5)
Waco
Standard J1
Curius JY4C
Waco-9
Curtiss Oriole (C-6)
Waco-9 (OX 5)
Standard (Brispano)
Curtiss JX4C
Wright-Bellauca
Waco-9
Special (OX-5)
Waco-9

#### SEPTEMBER 4-11 (Daily)

(B) National championship Free-for-All Parachute Contest—precision landing. The object of this coutest is to demonstrate the practicability of parachutes. \$500 in cash prizes; also, \$50 daily prize to contestant landing shortest distance from the marker in the daily trials. Civilian and military.

(Descent from allitude of 1500 feet. Each contestant limited to one descent per day.)

#### SATURDAY, SEPTEMBER 4

(1) 1:30 P. M.—First Elimination of the Free-for-All Race for Two or More Place Low-powered Airplanes for the Aero Club of Pennsylvania Trophy offered by the Aero Club of Pennsylvania for the permanent possession of the winner; also, \$1250 in cash prizes. Civilians only.

Three of the above races have been provided, of which this is the first. The planes which place in this event will not be permitted to enter the second race, but will be permitted to compete in the third race against the planes which place in the second race.

(Engine must have piston displacement of 510 cm. in. or less; total load, 340 lbs.; distance, 60 miles, five times around 12-mile course.)



The silver trophy which will be awarded by AERO DIGEST as a permanent possession to the winner of the speed race for light airplanes on September 8th. It is 36 inches high mounted on an ebony pedestal. Except for the silver figure of Winged Victory surmounting the top, it is of the same character as the silver trophy awarded by AERO DIGEST at the light plane races in New York last year.

List of entries Event No. 1, Saturday, September 4:

Chas. C. Baughan
Mayer Aircraft Co.
W. H. A. Boyd
Undington Exh. Corp.
Ludington Exh. Corp.
W. L. Gilmore
W. L. Gilmore
Pitcairn Aviation, Inc.
Pitcairn Aviation, Inc.
Lloyd O. Yost
Roswell Becker
Wm. H. Emery, Jr.
Travel Air Mig. Co.
Wichita, Kans.
Travel Air (OX. 5)
Travel Air Mig. Co.
Travel Air Mig. Co.
Travel Air Mig. Co.
Resider-Reisner Aircr. Co.
Kreider-Reisner Aircr. Co.

Waco-9
Waco-9
Waco-9
Waco-9
Waco-9
Waco-9
Waco-9
Thomas-Morse (OX. 5)
Thomas-Morse (OX.

(2) 2:45 P. M.—Free-for-All Race for Two, Three and Four Place Airplanes for "Independence Hall" Trophy, donated by Bailey, Banks and Biddle Company for the permanent possession of the winner; also, \$2500 in cash prizes. Civilians only.

(Engines must have fiston displacement of 800 cu. in. or less load, 340 lbs.; distance, 4 miles, seven times around 12-mile course.)

List of entries:

Mayer Aircrait Co.
Wright Aeron. Corp.
Curtiss Flying Service
Basil L. Rowe
Piteairn Aviation, Inc.
Chance Vought Corp.
Travel Air Mig. Co.
Curtiss Flying Service
Curtiss Flying Servi

Curtiss Oriole (C-6)
Wright-Bellanca
Curtiss Oriole
S. V. A.
Sesqui-wing Arrow
Vought UO1
Travel Air (Wright-E)
Travel Air (Wright J4B)
Curtiss Oriole
Cuttiss Lark
Special Biplane
Bonney Gull Monoplane

#### MONDAY, SEPTEMBER 6

(3) 9:30 A. M.—Duration Race for Model Airplanes for Mulvihill Model Trophy, competed for annually by members of Junior Flying League of the National Aeronautic Association. Trophy given to club, body or chapter represented by the winner.

(No restrictions on design of models except wing span must not exceed 40 in.; must be hand-launched and driven by rubber strand motors.)

List of entries:

Merril C. Hamburg
Elwood T. Anderson
Warren H. Delancey
Harold L. Laird
Arthur O. Heinrich
Bertram Pond
Desider Dayko
Soc. of Model Aeronautical Engineers
Joseph J. Lucas
Honore Somors
Christy C. MacGrath
Elmer G. Eckman
Luther G. Bechtel
Dominic deStelano
Orrin Heckman Anderson
Elmer Aug. Wilson

Detroit, Mich.
Philadelphia, Pa.
Springfield, Mass.
Chicago, Ill.
Baldwin, L. I., N. Y.
Peru, Ind.
Perth Amboy, N. J.
Wembley, England
Chicago, Ill.
St. Louis, Mo.
St. Louis, Mo.
Philadelphia, Pa.
Haddonfield, N. J.
Philadelphia, Pa.
Philadelphia, Pa.
Philadelphia, Pa.

(4) 1:50 P. M.—Novelty Relay Race for Commercial Airplanes for the "B.B.T." Trophy offered by the B.B.T. Corporation of America for the permanent possession of the winner; also, \$1000 in cash prizes. Civilians only.

(Two or mere place planes equipped with engines with fiston displacement not exceeding 510 cu. in.; load, not less than 340 lbs.; distance, 36 miles, three times around 12-mile course.)

List of entries:

Ludington Exh. Corp.
Ludington Exh. Corp.
Ludington Exh. Corp.
Basil L. Rowe
W. L. Gilmore
Pitcairn Aviation, Inc.
Pitcairn Aviation, Inc.
Pitcairn Aviation, Inc.
Travel Air Mig. Co.
Travel Air Mig. Co.
Travel Air Mig. Co.

Philadelphia, Pa. Philadelphia, Pa. Philadelphia, Pa. Keyport, N. J. Meadville, Pa. Philadelphia, Pa. Philadelphia, Pa. Wichita, Kans. Wichita, Kans. Wichita, Kans.

Waco—9
Waco—9
Waco—9
Thomas-Morse
Thomas-Morse (OX-5)
Orowing No. 1
Orowing No. 2
Sesqui-wing Arrow
Travel Air (OX-5)
Travel Air (OX-5)
Travel Air (OX-5)

(5) 3:30 P. M.—Speed Race for National Guard Pilots and Planes for the "National Guard" Trophy offered by C. T. Ludington for the permanent possession of the winner; also, \$1000 in cash prizes.

(Limited to National Guard training planes of the JN4 type, having a minimum wing area of 350 sq. ft.; equipped with direct drive engine having piston displacement not exceeding 720 cu, in.; load, 340 lbs.; distance, 84 miles, seven times around 12-mile course.)

CY(O)(I

~@(<u>=</u>

Pennsylvania National Guard

Lt. George N. Hyland Maj. John S. Owens Lt. George R. Dickens Lt. Jos. J. Gallagher Lt. Lawrence W. Helweg Capt. John J. Quinn Lt. George Logan

New York National Guard

Carl W. Rach Capt. Lawrence G. Brower Lt. Carl J. Sack Lt. Edwin Weatherdon Lt. Leonard F. Long

#### TUESDAY, SEPTEMBER 7

(6) 1:00 P. M .- Sport Plane Race for the "Scientific American" Trophy offered by "Scientific American" for the permanent possession of the winner; also, \$1500 in cash prizes. Civilians only.

(Single or two-place plones; load, in addition to fuel, cil and water, 170 lbs; engines must hove piston displacement of 300 cu. in. or less; distance, 60 miles, twelve times around 5-mile course.)

List of entries:

W. H. A. Boyd Heath Airplane Co. Kreider-Reisner Airc. Co. Kreider-Reisner Airc. Co.

Baltimore, Md. Chicago, Ill. Hagerstown, Md. Hagerstown, Md.

Pop Sons monoplane Heath Sport Meyers Midget K.R.A. Racer

(7) 2:20 P. M.-Race for Light Airplanes for the Dayton Daily News Light Airplane Trophy awarded annually by the Dayton Daily News to the Aero Club or N. A. A. Chapter represented by the winner; also, \$1500 in cash prizes. Civilians

(Engines with piston displacement of 80 cu. in. or less; minimum weight of filot, 150 lbs; distance, 50 miles, ten times around 5-mile course.) List of entries:

Heath Airplane Co. Kreider-Reisner Airc. Co. Kreider-Reisner Airc. Co.

Chicago, Ill. Hagerstown, Md. Hagerstown, Md.

Heath Sport Meyers Midget K.R.A. Racer

(8) 3:30 P. M.—Novelty Relay Race for Commercial Planes for the "Benjamin Franklin" Trophy offered by Joseph A. Steinmetz for the permanent possession of the winner; also, \$1000 in cash prizes. Civilians only.

(Engines must have piston displacement of 510 cu. in.; load, 340 lbs.; distance, 36 miles; three times around 12-mile course.)

List of entries:

Ludington Exh. Corp.
Ludington Exh. Corp.
Ludington Exh. Corp.
Basil L. Rowe
Pitcairn Aviation, Inc.
Pitcairn Aviation, Inc.
Pitcairn Aviation, Inc.
Travel Air Mig. Co.
Travel Air Mig. Co.
Travel Air Mig. Co.

Philadelphia, Pa.
Philadelphia, Pa.
Philadelphia, Pa.
Keyport, N. J.
Philadelphia, Pa.
Philadelphia, Pa.
Philadelphia, Pa.
Philadelphia, Pa.
Wichita, Kans.
Wichita, Kans.
Wichita, Kans.

Waco—9
Waco—9
Waco—9
Waco—9
Thomas-Morse
Orowing No. 1
Orowing No. 2
Sesqui-wing Arrow
Travel Air (OX-5)
Travel Air (OX-5)
Travel Air (OX-5)

#### WEDNESDAY, SEPTEMBER 8

(9) 1:00 P. M.—Second Elimination of the Free-for-All Race for Two or More Place Low-powered Airplanes for the Aero Club of Pennsylvania Trophy. (Continuation of Event No. 1.)

(10) 2:15 P. M .- Speed and Efficiency Race for Light Airplanes for the "Aero Digest" and "Betsy Ross" Trophies; also, \$2000 in cash prizes. The speed trophy is donated by Aero Digest and the efficiency trophy by Jacob Reed's Sons for the permanent possessions of the winners. Civilians only.

(Engines must have piston displacement of 80 cu, in, or less; load, 150 lbs. or more; distance, 50 miles, ten times around 5 mile course.)

List of entries:

Heath Airplane Co. Kreider-Reisner Aircıaft Co. Kreider-Reisner Aircraft Co.

Chicago, Ill. Hagerstown, Md. Hagerstown, Md.

Heath Sport Meyers Mid K.R.A. Race

(11) 3:40 P. M.-Light Commercial Speed and Efficiency Race for the Aviation Town and Country Club of Detroit Trophy, awarded annually by the Aviation Town and Country Club of Detroit to the Aero Club or N. A. A. Chapter represented by the winner; also, \$2500 in cash prizes. Civilians only.

(Planes must be constructed to seat pilot and at least two passengers: engine must have piston displacement not exceeding 800 cu. in.; ballast of 170 lbs. in lieu of each passenger; distance, 96 miles, eight times around 12-mile course.)

List of entries:

(Concluded on page 260)



### S. S. White Tachometer Drive Shafts

UR tachometer shafts have been subjected to the severest tests and have always met every task demanded of them. Built to U.S. Government specifications, of correct design, unsurpassed workmanship and the finest materials obtainable.

> We supply them to the U. S. Army and Navy.

The S. S. White Dental Mfg. Co. for many years has manufactured superior flexible steel wire shafts for every industrial purpose.

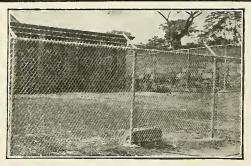
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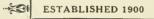
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#### (Concluded from page 259)

Mayer Aircraft Co.
Wright Aeronantical Corp.
Curtiss Flying Service
Basil L. Rowe
Pitcairn Aviation, Inc.
Lloyd O. Yost
Chance Vought Corp.
Travel Air Mig. Co.
Travel Air Mig. Co.
Alexander Aircraft Co.
Leonard W. Bonney
Kreider-Reisner Airc. Co.

Bridgeville, Pa.
Paterson, N. J.
Garden City, L.I., N.Y.
Keyport, N. J.
Philadelphia, Pa.
Philadelphia, Pa.
Conynham, Pa.
Long Island City, N. Y.
Wichita, Kans.
Wentita, Kans.
Denver, Colo.
Flushing, L. I., N. Y.
Hagerstown, Md.

Curtiss Oriole (C-6)
Wright-Bellanca
Curtiss Oriole
S.V.A.
Sesqui-wing Arrow
Fleetwing No. 2
Waco-9
Vought UO1
Travel Air (Wright J4B)
Eaglerock (OX.5)
Bonney Gull Monoplane
Waco-9

#### THURSDAY, SEPTEMBER 9

(12) 1:00 P. M.—Final race of the Free-for-All Race for Two or More Place Low-powered Airplanes for the Aero Club of Pennsylvania Trophy. (Conclusion of Events No. 1 and 9.)

(13) 2:15 P. M.—Special Contest—Precision Landing for the "Valley Forge" Trophy offered by Dr. Thomas E. Eldridge for the permanent possession of the winner; also, \$500 in cash prizes. Civilians only.

(Any type plane. Contest involves gliding from a minimum altitude of 1000 feet with engine switch cut and engine stopped, and landing far a predetermined point or location on field.)

List of entries:

Mayer Aircraft Co.
Basil L. Rowe
George Faw
Ludington Exh. Corp.
Pitcairn Aviation, Inc.
Pitcairn Aviation, Inc.
Pitcairn Aviation, Inc.
Pitcairn Aviation, Inc.
Lloyd O. Yost
Roswell Becker
Travel Air Mfg. Co.
Travel Air Mfg. Co.
Alexander Aircraft Co.

Bridgeville, Pa.
Keyport, N. J.
Santa Monica, Calif.
Philadelphia, Pa.
Philadelphia, Pa.
Philadelphia, Pa.
Philadelphia, Pa.
Philadelphia, Pa.
Conynham, Pa.
Jackson, Mich.
Wichita, Kans.
Wichita, Kans.
Denver, Colo.

Waco-9 (OX-5)
S.V.A.
Special (OX-5)
Farman
Orowing No. 1
Orowing No. 2
Waco-9
Waco-9
Waco-9
Travel Air (Wright E)
Travel Air (Wright J4B)
Eaglerock (OX-5)

(14) 3:00 P. M.—Race for Observation Type (two-place) Airplanes for the Liberty Engine Builders' Trophy which is awarded annually to the Aero Club, N. A. A. Chapter, or embassy of foreign country represented by winner, or to the U. S. Air Service; also individual trophy awards to first, second, third and fourth place winners. Military only.

(Load factor of wing cellule—6.5 high incidence condition, 4.5 low incidence condition; average speed, greater than 90 m.p.h.; total wing areag greater than 200 sq. ft., load, in addition ta contest load, 340 lbs.; distance, 144 miles, twelve times around 12-mile ccurse.)

#### FRIDAY, SEPTEMBER 10

(15) 1:30 P. M.—Race for Large Capacity Airplanes for the "Liberty Bell" Trophy offered by John Wanamaker, Philadelphia, for the permanent possession of the winner; also, individual trophy awards to first, second, third and fourth place winners. Military only.

(Distance, 120 miles, ten times around 12-mile caurse.)

(16) 3:15 P. M.—Race for Pursuit Type Planes for John L. Mitchell Trophy, competed for annually; also individual trophy awards to first, second, third and fourth place winners.

(Closed event for pilots of the First Pursuit Group; distance, 120 miles, ten times around 12-mile course.)

#### SATURDAY, SEPTEMBER 11

(17) 1:30 P. M.—Air Transport Speed and Efficiency Race for the Detroit News Air Transport Trophy, awarded annually by the Detroit News to the Aero Club or N. A. A. Chapter represented by the winner; also, \$2500 in cash prizes. Civilians only.

(Planes owned by civilians having minimum cargo space of 40 cu. ft. exclusive of pilot's cockpit, capable of maintaining average speed of 80 m.p.h. or more; minimum contest load, 1000 lbs. in addition ta pilot, fuel, cil and water for race; distance, 120 miles, ten times around 12-mile course.)

List of entries:

Wright Aeronautical Corp. Pitcairn Aviation, Inc.

Paterson, N. J. Philadelphia, Pa. Wright Bellanca Fleetwing No. 2

(18) 3:15 P. M.—Free-for-All Military Pursuit Ship Race for Kansas City Rotary Club Trophy offered by the Rotary Club of Kansas City, Mo., for the permanent possession of the winner; also, individual trophy awards to first, second, third and fourth place winners.

(Military or Naval planes of pursuit type, including those of foreign countries; distance, 120 miles, ten times around 12-mile course.)

#### OUR FLIGHT OVER THE NORTH POLE

(Continued from page 177)

We had failed in our first attempt. After all our work and worry we had failed to get off. To say that I was disappointed is putting it light. Then I thought of the crew who had worked almost continuously for the past forty-eight hours. They must have sleep and rest before any more work could be done. Every hour was vital to us as the weather was now perfect for our start. Buried as it was in the soft snow it seemed impossible to move the plane with its extremely heavy load without wrecking the landing gear. It was necessary to remove most of the 6,000 pounds of weight and carry it back to the top of the grade for another The crew was tired out and needed sleep and it looked as though it would be some time before we could make another trial. If we could get the plane back to its starting place immediately we could make another attempt at once. Therefore we took out about 1,000 pounds of the load and within half an hour we had the big Josephine Ford back to the top of the hill for another start. With the plane back in this position the spirit of the crew-rose. They felt there was still a chance. We decided to take out everything that we could possibly spare without greatly decreasing our cruising radius. By taking out various articles we reduced the weight about 450 pounds.

The runway was again smoothed out and the first hundred feet sprinkled with water to form ice which would better support the weight of the plane. The tail of the plane was secured so that the plane would not move until all three motors were developing full power. A line was passed around the tail skid and fixed to the ground, to be cut when our engines reached their full power. The gas and supplies were restored to the plane and all was in readiness.

The question arose as to whether we should start immediately or get some rest before going on the flight. Commander Byrd and I thought that we should go immediately but Captain Brennan of the *Chantier* insisted that we should get some rest first. We agreed to go to the ship and sleep for four hours. As we started down the runway towards the *Chantier* the Commander said, "Bennett, we ought to go while the weather is good." I answered. "Then let's go now."

We turned and walked back to the plane and gave instructions to have the motors warmed up and made ready. As this would take about two hours. I thought I might get a little sleep while this was being done, so put on my flying suit of reindeer and laid down on the snow to rest. But there was too much on my mind for sleep. I rested for about an hour.

At 12:50 A, M. (G. M. T.) on May 9th we were again in the plane and ready for another start, twelve hours after our first attempt. We had no "good byes" or handshaking this time. We took our places in the plane and when all motors were full out the signal was given to cut the line holding the tail skid. The plane glided smoothly down the long runway, rapidly increasing its speed. It was apparent immediately that this time we would get off. When a little more than half way down the runway we cleared the snow and were actually in the air. What a glorious feeling! After four months of preparation with its many disappointments and uncertainties we were actually started on our flight to the pole.

It was a beautiful morning with the sun comparatively low on the horizon. Our first sixty miles took us along the coast of Spitzbergen and over open water. After this our course was directly north out into the great unknown.

(Continued on page 262)

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American School of Aviation
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#### (Concluded from page 261)

We expected to find open water for the first hundred miles off the coast of Spitzbergen but the polar ice pack extended nearly to Danes Island. The edge of the pack was made of large fields of floating ice extending back a few miles before the solid pack was reached. We expected to find a belt of slush ice along the edge of the pack. We were not disappointed in not finding this slush ice for in case of motor failure we would have a better chance to land on the large fields of floating ice than in the small broken slush ice

I thought we would find the polar sca a mass of broken ice with no chance to land without wrecking our ship. I was surprised at the condition of the ice; it did not appear nearly as rough as I had expected. Running in every direction there were great pressure ridges, from ten to twenty feet high, formed by cakes of ice of all sizes. It was a great network of pressure ridges, but between some of these ridges were fields of comparatively smooth ice. All of this great mass of ice was covered with snow and in many of the fields between the pressure ridges could plainly be seen large blocks of ice projecting out of the snow. Some of the fields which I observed closely seemed smooth and I believe that a plane could land with some chance of rising again. Of course there would be great risk.

I noted the various sizes and shapes of the sections between the pressure ridges. We saw three open leads of water resembling long winding rivers extending through the ice. Two of these were very narrow, perhaps thirty or forty feet in width. The third was somewhat larger, large enough, I believe, to land a large seaplane in. There seemed to be no great change in the condition of the ice throughout the entire flight. There was an occasional lead that had just recently frozen over, presenting a blue line across the glaring white surface.

Everything went along smoothly for the first six hours, Commander Byrd continually checking our course with his sun compass, taking the drift of the plane, using his sextant to determine our position and taking photographs, both still and motion pictures. He relieved me at the wheel about twenty minutes out of every hour so that I might check up the gas consumption and pour more gas into the tanks from the 40 five-gallon cans. We did not have much time to let our thoughts wander and perhaps it was just as well.

After about seven and one-half hours Commander Byrd reported an oil leak in the starboard motor. From the cabin he had a good view of the wing motors and could see the oil leaking out and covering the cowling and tail section. He came forward and took the controls and I went back into the cabin to see if I could determine the seriousness of the leak. It looked bad and I did not know how long the oil would last. It is not possible to get out to the motor. The oil tank was completely cowled in and covered with asbestos and over this a covering of canvas. Therefore there was no way to determine the position of the leak. If it should be at the bottom of the tank all of our oil would drain out in a short time and our motor would be useless. I returned to my seat and Commander Byrd asked, "Is it a bad leak?" I wrote on a pad "It is a bad leak and we may lose the motor at any time."

Then we throttled the leaking motor to determine if we could continue with the two remaining motors should we lose this one, and we were able to maintain our altitude of 2.000 feet with the two motors. I indicated to Commander Byrd that we might land and fix the motor. We decided however to continue the flight to the pole and if necessary

to return on two motors.

For the next hour and thirty-five minutes Commander Byrd was busy with his sun compass, sextant, drift indicators and cameras. Suddenly he came forward and shook hands with me. We had reached the pole!

We circled at the pole and then started on our return. The sun was now almost directly in front of us to the left. that is, it passed across the windshield from left to right, and I was able to use it as a check in holding my course. After about six hours on our return course I sighted what I thought to be land but as I was not sure I did not call the Commander's attention to it. After another fifteen minutes I was sure it was land and it certainly looked good. It was apparent we were making better speed on our return than going out.

We were about a hundred miles from land when it was first sighted as it took us about an hour to reach the coast of Spitzbergen. The remarkable thing was that the oil pressure was still up on the starboard motor, although half of the oil had leaked away. (Later examination on our return showed the leak was due to a rivet coming loose half way down the tank.) We neared the coast of Spitzbergen within one mile of the point toward which Commander Byrd had set the course—a tribute to his skill as a navigator.

Now we had only one hour more to reach King's Bay. I was glad of that as I had been awfully sleepy for the past two hours. I spiraled down for a landing and came over the field to land. As there were too many people where I wanted to land, I had to make another circle of the field. This time there was a place clear and we settled down safely on the snow and taxied up to the place we left sixteen hours before. Our mission was accomplished, and at last I could get some sleep!

#### A NOD AND A WINK

(Concluded from page 187)

Now then, the planes line up, just as horses do, for an even start. At the drop of the flag they are all off together for a race against each other, instead of going off in relays for a race against Time as they do under the present rules.

Of course you think they're going to dash around the course, all in a bunch. No such thing. They don't fly the course right away. They head in a straight line for the Caldwell Automatic Spacing Pylon, which is not on the race course, but is situated at the edge of a town ten miles away. In that flight of ten miles the faster planes will draw ahead of the slower ones, and the fastest plane will be first to round the spacing pylon, and the next fastest will follow, and so on, in positions determined solely by the speed of the vehicle.

Now you begin to comprehend the thought I have put on this problem, and you say to yourself, "What a mind!" In ten miles the planes have strung out, and after they have rounded the Automatic Spacing Pylon and come thundering back the ten miles to the course, they are well apart. And no bunching on the first turn of the course.

But what of the spectators while the planes were away getting spaced by their speed, or lack of it? Are they fed up? No! they wait eagerly for the first plane. There is the element of suspense, uncertainty. Who will be in the lead? It is only suspense that makes excitement, and excitement is what people go to a race for. In the present races the only possible excitement lies in the thought that someone may be killed. That is actually what gets the majority of the crowd. Have an accident, and next day's (Continued on page 264)

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Motor top cowl, \$8.50. Standard nose cowl, \$6.50. Metal or bamboo wingskid for Canuck or JN4D, \$1.50; bamboo for Standard, \$2. Nose radiator for Canuck or JN4D, \$25; over head radiator for Standard, \$25. Dandy New Hispano nose type radiator, \$95.

ator, \$95.

French gogglets, \$4.05; Italian gogglets, \$4.25; Non-Shatterable gogglets, NAK wide vision, \$4.50; or Jumbo Oval, \$3.25; Triplex widevision, \$4 or Triplex oval, \$2.50. Triplex oval, green top, clear bottom, \$3.25. Dandy D 5000 metal tipped ON5 propellers, \$35; dandy OX5 toothpick metal-tipped propellers, \$25, or club type (untipped), \$12.50; dandy OXM6 metal-tipped mahogany club propeller or Flottorp toothpick, metal-tipped, \$35; LeRhone propeller, \$20. 130 hp. Clerget propeller, metal-tipped, \$35; Curtiss V-2 (200 hp.) propeller, \$35. All our propellers are right out of the original boxes.

Rotary map case (rotates as trip

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Rotary map case (rotates as trip progresses) \$3.50. Leather magneto cover, 90c.; Gosport speaking tubes with OD helmets, \$12.50; intercommunicating telephone set, for instruction, \$20. Type L aerial camera, in original case, with 36 magazines, takes pictures 4 x 5, \$100. Long cylinder hold-down studs for OX5 and OXX6 motor, 60c. each or OX5 and OXX6 motor, 60c. each of this compression, 15c., or oversize. 25c.; OXX5 piston pin, 50c., piston, \$3.50; OXX6 piston ring, 30c.; OXX6 piston pin, \$1.10; piston, \$5.50; individual exhaust stacks for OX5 or OXX6, per set of 8, \$8. All parts for DX4D, Canuck, Standard, OX5, OXX6, and many Liberty, Le Rhone, Hispano, Clerget, Fiat, and Lawrance parts. Hispano, C

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(Continued from page 263)

attendance will be doubled, as the records show. That is why the aerial trapeze act at the circus holds the attention four times as fixedly when the performer is working above the hard ground than when he is whirling above a net.

The crowd waits eagerly for the first racer to appear. There he is! Colonel Hartney leading in the Yellow Cab! He flashes around the pylon and is off up the stretch. Another dashes into view—Hugh Watson in his Standard. He flashes past at incredible speed. A roar of enthusiasm from the crowd! Another roar! Elliott Springs in his Waco! Now they're coming fast. Here's René Fonck and his interpretor in the Sikorsky, closely followed by Tony Yackey in a Yackey sport with a load of helmets he has brought to sell after the race. The excitement is intense! Congressman LaGuardia, rooting for Yackey, distributes bottles of his famous 2.76 per cent. beer among the crowd. The ambulance is sent for. Next comes Montee and Ryan, their planes decorated with a sign, 'See California and have an orange!" Then Earle Ovington with an OX5 mounted on a Subdivision billboard. "Follow the Swallow," shouts the crowd as he tears by. Then the band strikes up to welcome the next plane carrying Uncle Tony Fokker and his army of press agents. It takes three engines to drag the press agents. The crowd can hear the clatter of the press-agents' typewriters above the roar of the motors. Away goes the big plane, trailing a radio antenna through which Uncle Tony is broadcasting a speech that Henry Ford and Edsel are listening to in Detroit. They're hoping Tony will mention how a plane can be made to fly with three engines. The Fokker is followed by the Ford monoplane with Reed Chambers at the controls. It got so used to following the Fokker in the last year's Ford Tour that it takes this position by force of

There's Chance Vought ahead of Grover Loening, their minds not on the race. They are figuring out what part of that \$80,000,000 Government aircraft appropriation they can get. They pass, just as Casey Jones comes into sight in his 1776 Sesquicentennial Oriole. He leans far out of the cockpit, his eagle face cutting the breeze like a knife as he looks for a place to land in case he runs out of gas.

But who is this who comes lumbering over the starting line? It is Al Williams in the Navy Pulitzer racer. He hardly knows how to find the course, as he hasn't Cy Bettis to lead the way as pathfinder in the Army racer as he did in the last Pulitzer. He gets out his Airways map and studies the terrain, while his racer hovers in the air like a helicopter. Admiral Moffatt stands in the crowd shouting encouragement and directions, while Lieut. Jeter is studying a book by a staff officer on social etiquette among the Anacostians.

The planes all start even in a real race, are all automatically spaced by their own speeds, and finally tear around a course where the spectators can see them and keep track of who's winning.

But the race goes on, the planes thundering around in plain sight, coming down the stretch right in front of the crowd, not half a mile away as in that asinine meet at Dayton. Around they go. The excitement is intense. Hot dogs are let lie. The crack of the peanut is stilled. The last lap! Who is the winner? Here he comes! Just a streak! Why it's Walter Beech in the Wright Whirlwind Travel Air! He's been flying so fast he wasn't visible to the naked eye before.

But now someone will object that it is impossible to make the best speed on such a small course. Certainly it is. No plane makes as good speed on a closed course as it does on a straightaway, no matter how large the course. It doesn't make its top straightaway speed in the present misnamed races with their courses slopped over three counties. If you want to learn the highest speed of a plane, run it over a straight course and time it. Or better still, look at the manufacturer's ad in Aero Digest. You'll find absolutely the highest speed there.

We've had too many mere speed contests under the name of races. What we need is a RACE. How many people would watch six horses racing, not against each other, but against the clock? Not one. And neither will they watch airplanes doing the same thing. They've proved that by staying away. Have speed contests, by all means. But if you want to interest a crowd, put on a RACE, and stop trying to fool the public. It can't be done, except by Pennsylvania politicians.

The purpose of holding races is to interest the public in aviation, not to discover the speed of a plane, which cannot be done that way. The purpose should be educational, and the aim should be to educate the greatest number and make the thing financially possible. If the National Air Races aren't successful in Philadelphia this year, with the Sesquicentennial to draw a crowd, what city is going to bear the burden of them another year? The Sesqui is paying for this year's race. After that Pennsylvania Senatorship scandal, I hope they don't send Senator Reed to investigate the Air Race expenses. He might find more outgo than income.

But the method I have outlined for running races is only part of my plan for interesting the public in aviation. "Heavens!" I hear you exclaim. "Is there no limit to this man's cleverness?" Practically none. I've been married six years and can still think up new excuses to stay out nights. Absolutely a record.

This other idea comes from the Kentucky Derby, where I won \$16.20 and lost \$150 playing poker on the train coming back. That's how smart I am. I had learned the game in Canada, but I was playing in the United States where they invented it. Perhaps I need a nurse when I ride on the trains. After the game was over the winner handed me a book to read. It was the "Life of P. T. Barnum."

Anyhow, I discovered why men go to races—and why some go in taxis and return on foot. They bet by the pari-mutuel system. The idea is that you pay \$5 for a ticket on a horse, and when he fails to win you throw away the ticket. After a day's racing there are two tickets for every blade of grass on the field. If your horse wins you get back your \$5 and perhaps 30 cents extra. If it's a long shot you clean up. That may not be clear to you. It's a technical term racing men use. I've never had occasion to use it.

I played a system, as all beginners do It was very brilliant, as most systems for beating the races are. It consisted simply—and very, very simply, I may add—in picking horses with lucky-sounding names. Prince of Wales caught my fancy. Now I figured that a horse with a name like that probably would throw his jockey, and thus, having no load, get home first. The jockey stuck to him, however, in spite of which the horse won. That shows a real gambling man, playing a good system, will win easily. I bet \$2 on the Prince and got back \$2.10. Ruined a pair of shoes and I lost my hat in the crowd. But I won 10 cents.

In the next race I deserted my system after an interest-(Continued on page 266)

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#### (Continued from page 265)

ing conversation with a race track tout, who informed me that he knew as much about the horses as their own mothers, and could predict accurately just where each one would be when the dust cleared away after the race. "Listen," he said, breathing on me earnestly, "O'Sullivan's Heels is going to win the next. He's so fast that Peggy Joyce can't ride him. Don't ever stop betting on this one. He'll carry all the cash you got, an' go right down on his knees askin' you to pile on more. O'Sullivan's Heels will bounce on top and breeze home." The only breeze he got was from the horses in front. He didn't even raise a dust of his own. But he didn't need it—he had all the others'!

The next race was the Kentucky Derby. Now, I had been losing so that I got to a point where I was simply boiling over. I was mad. So when I got to the betting machines and noticed a horse named Bubbling Over, I at once decided to return to my system. I was boiling over, as I've said, and the horse was Bubbling Over. Any betting man will see the lucky connection at once. A combination like that just had to win. So I put every cent I owned in the world on that horse. The savings of a lifetime—six dollars.

I clutched my betting ticket and rushed back to the track. It was a thrilling feeling that I experienced. In another few minutes would I be affluent or all flooey?

A big negro beside me said he had his all on Display. If he had used my name system he'd have known that Display couldn't win. A display means a show—and what's the use playing a horse to win when its name indicates that the best it can do is to "show", which in racing parlance means third place?

They were off! I edged nearer the rail and someone climbed on my back to see better. That's all you get for \$7.70 at the Derby. All you can do is climb on the chap in front.

Around the track went the horses. Up and down leaped the big nigger and myself, watching our cash carriers. "Come on, Display!" he yelled, and "Come on, Bubbling Over" I shouted.

Bubbling Over was in the lead. The dinge got out a rabbit's foot and rubbed his ear. I had to laugh at his superstition. Oddly enough, Display put on a spurt and started to overhaul my horse. I'm not at all superstitious, but why take chances? I grabbed the rabbit foot and rubbed my ear. Bubbling Over gained slightly. Before the dark cloud could get back his rabbit's foot, my horse had left Display and all the rest behind and was coming down the stretch.

"Go it, Bubbling Over!" I yelled, and "Go it, Display!" shouted the nig, both of us rubbing our ears together with the rabbit's foot between them—though it hadn't brought much luck to the rabbit.

Then a mighty shout, "Bubbling Over wins!"

Boy! What a feeling! \$16.20 for \$6.

The old home is saved!

Now, relax. Lean back in your chair and listen. Excitement is what we must put into air racing if it is to continue and not die of financial starvation. If you expect Pro Bono Publico to be interested in air racing and support it, you must offer him conditions where he may find excitement. He must be able to center his interest on some certain plane and be able to see during the race whether that plane is winning or losing.

By the Caldwell Automatic-Spacing Pari-Mutuel Air System he can do those things—and walk home.

#### "HELL'S BELLS" O'NEIL

(Continued from page 194)

fourflushing misnomer. I don't know whether I am going to break your neck first or your ankle. I've been shot down and taken prisoner. I've been six months in a Hun strafe camp. I've escaped. I got out of Holland before I was listed and reverted to a non-combatant category. I'm here without a cent or a uniform. I got a squadron in France I want to go back to. That's my story—you yellow-streaked, golf-playing strand galloper!"

"'You're under arrest!' says the Colonel. Jack turns on him. 'I'll see you in hell first, you damned slacker. You can fork over with transportation and a clothing allowance now, or I'll knock your heads together and spill the story to Horatio Bottomley with both your names on the front page! I don't want any leave-I'm not asking for

a damned thing but money that's due me-

"'Get out!' yells the Major.

"Jack jumps at him and grabs the golf club. 'Now listen,' he says. 'I've killed a few men in my life, and so help me God, I'll smash this through your rotten skull if you don't sit down at that desk and write me out the necessary forms. You can stand over at the window while he's doing it,' he says to the Colonel.

"Well, they see a sort of red look in his eye, so they move and move fast. Fifteen minutes later everything is ready for him. The Major glares at him and starts to speak, but before he can say anything, Jack says, 'And now forget it. You won't make fools of yourselves before your own sergeant, I'm sure.' And he opens the door as sweet as you please, and so that the sergeant outside can hear him, he clicks his heels, salutes and says, 'Thank you, sir, for your courtesy in this matter. I'm very much obliged to you both.' And he goes—leaving them speechless with their mouths hanging open a foot.

"Oh, dear," says "Hell's Bells," "it was an annoying war-which reminds me of Cadet Smith, V. C."

(In October.)

#### LINKING THE AMERICAS BY AIR

(Concluded from page 188)

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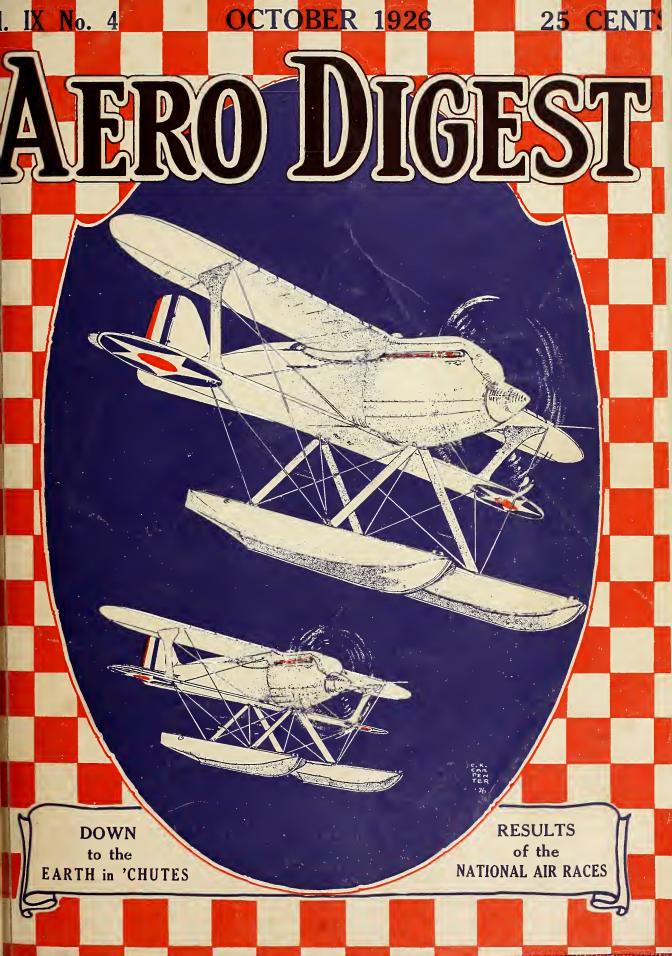
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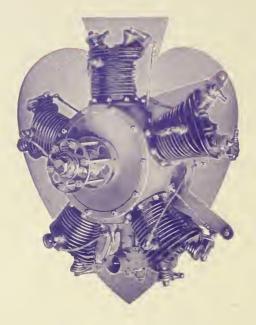
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PILOT	PLANE	ENGINE	EVENT	RECORD
Ross Arnold	Curtiss JN4C	Curtiss OX5	"On to the Sesqui Race"	3rd
			Independence Hall Trophy	
66 66	44 46		Aviation Town and Country Club of Detroit Trophy	3rd
			Detroit News Air Transport Trophy	
" "	" "	66 46		1st†
			Aero Club of Penn. Trophy (Second elimination)	
Richard Depew	Travel Air	46 44	"B.B.T." Trophy (Team Relay)	3rd
Fred D. Hoyt			"On to the Sesqui Race"	
" " …	" "		"B.B.T." Trophy (Team Relay)	3rd
" " …	" "	46 44	Aero Club of Penn. Trophy (Second elimination)	1st
Casey Jones	Thomas Morse		Aero Cluh of Penn. Trophy (First elimination)	
" "	Curtiss Oriole	Curtiss C6	Independence Hall Trophy	1st
" "	Thomas Morse	Curtiss OX5	"B.B.T." Trophy (Team Relay)	1st
" "	46 44	" "	Benj. Franklin Trophy (Team Relay)	1st
" "			Aviation Town and Country Club of Detroit Trophy	
			Aero Club of Penn. Trophy (Final)	
A. C. Kerr	Orowing		Benj. Franklin Trophy (Team Relay)	3rd
A. H. Kreider		" "	"B.B.T." Trophy (Team Relay)	1st
			Scientific American Trophy	
" "		Curtiss OX5	Benj. Franklin Trophy (Team Relay)	1st
" "	K.R.A. Midget	Wright Morehouse	"Aero Digest" and "Betsy Ross" Trophy	2nd
				3rd
			"On to the Sesqui Race"	
			"B.B.T." Trophy (Team Relay)	
			Detroit News Air Transport Trophy	
		" "		
		Curtiss C6	Benj. Franklin Trophy (Team Relay)	
			Independence Hall Trophy	
			Benj. Franklin Trophy (Team Relay)	
			Aviation Town and Country Club of Detroit Trophy	
			Detroit News Air Transport Trophy	
			Aero Club of Penn. Trophy (First elimination)	
" "			"B.B.T." Trophy (Team Relay)	
"			Benj. Franklin Trophy (Team Relay)	
"	66 66 66		Aero Club of Penn. Trophy (Final)	
	Ford Tri Motor	3 Wright Whirlwinds	Detroit News Air Transport Trophy	3rd*
			Aero Club of Penn. Trophy (Second elimination)	
		Our tios Onto	** C	

(NOTE:—See the inside back cover of this magazine for Mobiloil's record at the Ford Efficiency Tests).



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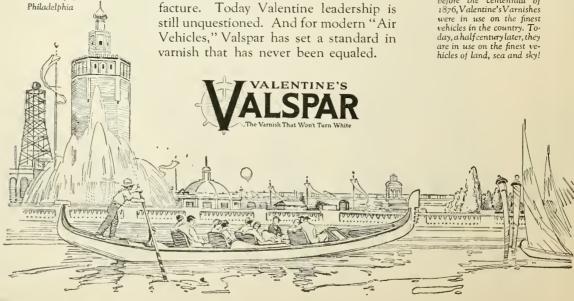
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# AIERO DIGEST

Vol. 9 No. 4

OCTOBER, 1926

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Here the free spirit of mankind, at length
Throws its last fetters off; and who shall place
A limit to the giant's unchained strength,
Or curb his swiftness in the forward race?

-Bryant.

#### AIR-HOT OTHERWISE

HE United States Navy is a wonderful organization. Great strategists—on the high seas of politics. Wonderful organizers-of congressional lob-

Wirepulling and Logrolling Frank A. Tichenor

alert and ready. Theirs was not a battle against any foreign foe. It was a battle of the Navy, for the Navy, and, by jingo, by the Navy -a battle for the retention of fat

bies. Tremendous disciplinarians—when it comes to getting out the vote. Powerful on land, too—not a gallant officer in all the lot who cannot throw the bull. I have never seen the ring down at Annapolis where midshipmen must be taught to battle with this ferocious animal, but it must be

appropriations, for the multiplication of soft snaps, for new polish on brass buttons and the swanking of the bureaucrats in opposition to America's best air interests.

The Navy-three cheers for it-when it marches up Fifth Avenue. That's where it shines resplendent. As commanding officers of fighting ships the bosses of the great American fleet are among the best Fifth Avenue paraders in all history.

General "Billy" Mitchell, chosen as president of the N. A. A. and left to travel his own decent, high-minded and experienced course, would put the National Aeronautic Association in line with patriotism and out of line with politics. Great heavens! Such a thing. It stirred the Navy to astonishing action. A dead N. A. A. was O. K. for the Navy; a live one could not be controlled and used for their purposes.

Wonderful fighters, they are, too. Remember the Maine and then the great battle between those gallant admirals Sampson and Schley. Marvelous. Incredible. Unprecedented. It filled the world with one hundred per cent-

General Mitchell did not seek this opportunity to get another wallop on his fine and all-American ear. The boys did not go over the top in France because they wanted to be killed. He had done a similar thing in Washington when he had come out in committee and told the truth about the aeronautical mismanagement in both the Army and the Navy.

Fine fellows are these Navy men of ours. When Dewey lay out in Manila Bay and our lovely little wooden ships were menaced not only by the Spaniards, but by the Germans, who at that time were contemplating entering the war as the allies of Spain, a British fleet steamed in and anchored so that any shot fired at our fleet would first have to pierce. a British ironclad—and the Germans hastily withdrew. Dewey never could have handled Spaniards and Germans both. The Anglo-Saxon blood of the English naval men on this occasion proved thicker than water. But the other day when the Chinese mercenaries sailed in strength against a few British ships and began to throw real shells at them, American vessels close at hand withdrew discreetly. To have remembered Dewey's salvation by the British in Manila Bay would have involved more than logrolling and lobbying by American naval men.

It was not his idea. It was that of Aero Digest which wished to use him as a means of compelling a revelation of just what forces in the N. A. A. have been preventing it from functioning as its charter calls on it to do.

Since the days of 1812 the Navy of this country has had no real fight, for of course it is unfair to speak about the Civil War, which was a family scrap.

We were responsible (and are very proud of it) for the fact that the General allowed his name to be used as a means of forcing a showdown. After much discussion and without illusion, he consented to be crucified once more in the interest of American aeronautics.

The mere announcement of the candidacy stirred the patriots into enthusiasm and the bureaucrats to white hot action. If I could only feel that some day these Navy men might fight as hard and ably for the nation's good as they fought against its aeronautical interests, I would not be worried for our future in the air.

The Navy has great pugilists among its gobs, but those who love to see America's naval men engaged in a battle should have been in Philadelphia at the N. A. A. convention. There they were at their best. The wigwagging of the wigwaggers, the wirepulling of the wireless experts, the yard-manning of the backyard politicians all proved the competence of the United States Navy, especially as it is now engaged in this political strangulation of aviation.

The really air-minded people of the country had been apathetic toward the N. A. A., but American citizens never are hysterical with love for our bureaucracies. They therefore widely welcomed the suggestion of Mitchell as its head.

The Battle of the Bellevue-Stratford down in Philadelphia was a complete vindication of the folks who still call the American Naval Officer a great fighting man. There and then our gallant Navy licked the possibility of a real aeronautical association in the United States. Civilians had dared to butt into the game—and the art of aviation was created by civilians—feeling that already the nation had been sufficiently humiliated by the subordination of our air development to the interests of the Washington bureau-

The Navy was determined it would keep control, and as it holds the say so with regard to contracts, the suppliers perforce are yes-men when the Navy speaks. I believe that everyone of them regrets this. They know where the best interests of aviation and the country lie, but they are helpless. What can they do? Washington is money. Money talks.

Fight? No! When they have a real fight they have to call on the Marines. It was preparedness par excellence; there's a lesson for the nation in it. It was all cut and dried. Strategists? Napoleon was a mere piker.

Word went out to all that Mitchell must be defeated and that delegates must be secured to do this.

Now, let's see how it was done.

The announcement about the middle of August that the General might be a candidate, coming at such a late date put some obstacles in the way of securing delegates. The by-laws say that the delegates and alternates are to be selected according to the records of the chapters sixty days prior to the date of the National Convention. The Convention was called for September 7th, 8th and 9th, so only twenty odd days intervened. But are by-laws to be considered when some one dares contest the sacred and almighty power of our deck-swabbers?

But to go back to the Bellevue-Stratford. The situation there was not like that the other day in Chinese waters or in 1898 in Manila Bay or anywhere where real fighting means that some one may get physically hurt. So the Navy was

How were these delegates to be secured? Well, let the facts tell the story, and you do the thinking. According (Continued on page 335)

Many student classes were

trained by us at the Air Serv-

ice Mechanics' School. One of

my first pupils was the present



# DOWN to the EARTH in 'CHUTES

PARACHUTES have saved the lives of nearly one hundred American airmen in the past two years. Their adoption as a standard part of pilots' equipment has

saved for our air services more pilots than would normally graduate from one of our advanced flying schools in a year. Yet, it was only six years ago that jumping was regarded as high adventure in the air service. In the spring of 1920 there were only six of us who had ever taken the leap from an Army airplane.

The present perfection of parachute design was only attained after making many radical alterations of the original training type in which we made the first jumps. Each al-

teration was followed by weight tests and then it was my job to make the first live jump with the remodeled chute. Some of these tests were productive of real thrills,

The seat pack, which is now the standard service chute, required many months of experimental jumping and alterations before we reduced its landing speed to a safe figure. We tested various diameters ranging from 18 to 24 feet. On the first jump ever made with a seat pack I attained a rate of descent of 40 feet per second. As the normal rate is only 17 feet per second the chute was unsafe for service. We had on that day taken the precaution of putting one plane in the air with orders to circle the field at a constant altitude of 1000 feet. We ascended to 3000 feet from where I jumped. In checking my elapsed time from leaving my plane and arriving abreast of the one at the 1000-foot level, I found the distance had been covered in 50 seconds. To land at the speed at which I was traveling would not have been healthful.

A reserve chute, one of the old training type, was on my chest for just such an emergency and I lost no time in opening it.

It was later discovered that by cutting the silk panels of the chute on the bias more resistance was offered to the air in descent and as a result the speed decreased. This, together with a new type of vent, gave us a chute that landed at 17 feet per second and was small enough to make a compact pack. Such a chute is today the most efficient airplane life preserver in the world.

#### By Lieutenant G.A. Shoemaker

Former Chief Instructor in Parachute Jumping, Army Air Corps

Corps

Assistant Chief of Air Service, Brigadier General James
Fechet. In August, 1920, he was Lieut. Colonel and Air
Officer of the 8th Corps Area. Colonel Fechet displayed
a keen interest in our parachute work at Kelly Field and
was a frequent visitor. One day he rode the rear cockpit while Lieut. Eugene Eubanks and I were making the
first double "lift-off" from the upper wings of a DH.

The next day Colonel Fechet came to the parachute school and informed us that he wished to make a lift-off from the upper wing that afternoon. After witnessing the packing of his chute he was ready for

the jump.

Lt. G. A. Shoemaker ready for action.

Just before taking his place on the wing the Colonel was informed of the signals to be used between us after taking the air. After we had reached an altitude of about 3500 feet a slight mishap occurred. His goggles flew to the rear of his helmet and the rush of air over the wing was blinding him. Hanging to a supporting rope with one hand, he at last recovered the straying goggles with the other and we were again ready for the jump. I signaled him to rise to his feet. A half-inch rope was attached to the leading edge of the wing for use as a support when in this position. It was only two feet long and the day before I had discovered that it had to be held as loosely as possible in order to prevent burning the palm when the chute lifted one off the wing. As the Colonel stood up I was astounded to see that he had taken a half hitch with the rope about his right wrist. He was awaiting the signal to pull his rip cord and I was

afraid to move a hand lest he interpret it as a signal to go. Should he pull the cord his arm might be torn off and worse might happen.

Kneeling down on my small platform I began to attract his attention with constant negative shakes of my head. At the same time I looked back at the pilot and signaled him to make another circle over the field. Then began a series of gestures for the Colonel's benefit. Using my right hand and my own guide rope I at last attracted his attention

to the position of his own rope and was rewarded by see-

ing him take the proper grip and look over to me for approval. All this time he had been on his feet on the wing and I had been in various poses. We were both worn out. As soon as we reached a position over the field where it would be safe to lift off the signal was given and Colonel Fechet took the air. It was the first and the only time I have ever seen a



P. & A. Photo.

A "lift-off" drop by Lieutenant J. R. Tate from a naval plane at Pearl Harbor, Honolulu.

field officer tumbled head over heels into space. Leaping immediately after the Colonel I drifted over toward him and both saw and heard him land with a resounding thud.

As he arose to his feet his first words were "wait till my wife hears about this." The Colonel had a badly burned palm but otherwise was unhurt. He also was game for another jump.

Lieut. Jimmie Doolittle, winner of last year's Schneider Cup competition at Baltimore, was another of my pupils who had a most interesting introduction to the parachute. The platforms which had been placed on the upper wing surfaces to protect the fabric against our weight were of very light wood construction. To reduce the air pressure beneath them while in flight and so keep them from tearing loose from the wing spars to which they were screwed, we left openings almost a half-inch wide between the boards. The entire platform was only two feet square. Doolittle and I took off for his first jump laying on two such platforms. After we had attained our altitude we were flying over South

San Antonio, headed for the field. I signaled him to rise to his feet as we would be ready to lift off in a few seconds. After this signal I again looked ahead toward the field. As we approached the spot over which I wanted him to pull his rip cord I turned to his side of the plane to give the signal and was greatly surprised to find him gone.

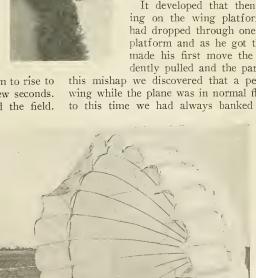
Looking back at the pilot I saw him waving his hand to the rear. There, floating slowly to earth, was Jimmie. He was headed for the outskirts of the village of South San Antonio. I jumped at once and upon landing in the field ordered the ambulance which met me to drive toward the spot where Doolittle would probably land. The plane had turned about and was now circling over this area. About twenty minutes later we found him suspended from the branches of a small oak tree, his chute draped over the topmost branches and his feet just out of reach of the ground. No one had seen him come down and his harness had held him a close prisoner.

It developed that then, while we were lying on the wing platform his rip cord ring had dropped through one of the cracks in the platform and as he got the signal to rise and made his first move the cord had been accidently pulled and the parachute released. By

this mishap we discovered that a person could leave the wing while the plane was in normal flying position. Prior to this time we had always banked to the left wing to

> let the man on the left off and side slipped to unload the one on the right. It had been our opinion that we would strike the tail surfaces unless our ship had been so maneuvered.

Students were at first introduced to the parachute by making a live jump from the step alongside the front cockpit. Two classes were graduated in this manner. Then, as a re-



International Newsreel

Parachute used by Stephen Boudreau in his "delayed opening" drop of 3500 feet at Selfridge Field. He jumped from an altitude of 4500 feet, opening the chute 1000 feet above the ground.

(Continued on page 334)



IVIL aviation in Italy has shown some very practical results this year. The Italian Air Ministry is carrying out a vast aeronautical program with

great assiduity which, with the active participation of industrialists, financiers and private groups in Italian aviation, show that we are on the eve of a formidable development in Italian air commerce.

In April the Turin-Pavia-Venice-Trieste line was opened which follows the valley of the river Po and which will link up with the Trieste-Vienna, Trieste-Budapest, Milan-Munich, Turin-Lausanne and Turin-Zurich lines. all of which will be inaugurated shortly. With this line Italy hopes to facilitate the traffic between the important industrial centers in the valley of the Po, and to concentrate the commerce of Central Europe and the East in her chief commercial harbors, Trieste and Genoa.

Another line was also inaugurated in April—the Genoa-Rome, Naples-Palermo, which follows the coast. This

line, although it has not the international importance of the other, is eminently useful from a military a n d political point of view serving, as it does, to protect the interests of Italy in the Mediterranea n, especially with the Genoa-Barcellona, Rome-Sardinia-Tunis and the Palermo-Tripoli lines which will be opened within the next year.

#### By Alighiero Baciocchi

Photographs by Courtesy of the Istituto
Nazionale di Propaganda Aeronautica

culties and after lengthy negotiations with the Greek and Turkish Governments, the Brindisi-Athens-Constantinople line will means of which Italy will be able to pro-

In spite of many political diffi-

soon be started, by means of which Italy will be able to protect her commercial and political interests in the Balkans and the Near East. According to the program established by the Italian Air Ministry, a line from Milan will converge at Brindisi, as well as a line from Rome, both of which are about to be inaugurated.

The Turin-Trieste line, operated by the "Società Italiana Servizi Aerei" (S. I. S. A.) of Portorose, with flying boats built in the "Cantiere Navale Triestino" of Monfalcone, has a daily service which follows the valley of the river Po from Turin to Chioggia, and follows the coast along the Adriatic from Chioggia to Venice and Trieste. A short stop is made at Pavia and Venice for the benefit of passengers and mail. The fleet of the S. I. S. A. consists of six flying boats of the Cant. 6 ter type, fitted with three

400 h.p. Lor-raine engines. One of these planes is shown in the illustration below.

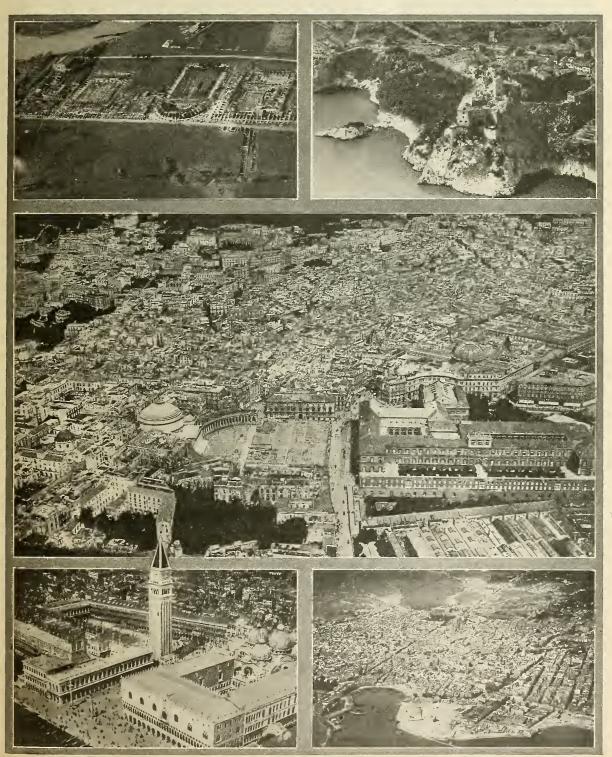
The "Società Anonima di Navigazione Aerea" (S. A. N. A.) of Genoa runs the Genoa-Palermo line, which follows the Mediterranean coast with a short stop at Ostia, Rome and Naples. The same firm has the concession for the Genoa-Barcellona ser-



One of the large passenger-carrying flying boats in daily operation from Turin to Trieste.

vice, for the organization of which Italy is negotiating with the Spanish government. The machines used are Italian built Dornier Wal flying boats, with cabins for ten passengers, and are equipped with two Bristol Jupiter engines of 400 h. p. designed in England and built in Italy.

The "Aero Espressa Italiana" is the concessionary of the Brindisi-Athens-Constantinople line which passes through (Continued on page 333)



World-famous cities and beauty spots along Italy's commercial airways:

(Top)—Ancient ruins at Ostia on the Tiber, seen from the air. (Left)—Typical ruins of a castle along the Italian seacoast. (Center)—The heart of Naples showing the royal palace at the right in front of the State Cathedral and Plaza. (Bottom)—The Piazza St. Mark and the historic palace at Venice. (Left)—The province of Palermo, on the north coast of Sicily.



# NATIONAL AIR RACE RESULTS



THE On-to-Sesqui race for the Sesquicentennial Trophy offered by the Sesquicentennial Exposition was won by Fred Hoyt, of Eureka, California, who flew the 2,558 miles from Eureka to Philadelphia in 31 hours flying time. (146 hours elapsed time.) Flying an OX5 Travel Air, Hoyt left Eureka, with Al May as passenger on August 25, landing at Model Farms Field at 6:02 a. m., on September 1. A cash prize of \$1,200 was awarded with the trophy.

The second prize, \$800, was won by Austin Lawrence of Love Field, Dallas, Texas. Third place, with a cash prize of \$600, was awarded to Ross Arnold, also of Love Field. Both Lawrence and Arnold flew JN4C planes with Curtiss OX5 engines.

SATURDAY, SEPTEMBER 4—RACES FOR AERO CLUB OF PENNSYLVANIA AND INDEPENDENCE HALL TROPHIES

The races were officially opened at 3:05 p.m. on Saturday, September 4, by Miss Gloria Swanson, screen star, who fired the starting gun.

Basil Rowe, of Keyport, N. J., flying a modified Thomas Morse S4E with Aeromarine T. B. engine, won the first event—the first elimination of the free-for-all race for two or more place low-powered airplanes for the Aero Club of Pennsylvania Trophy, and \$500 in cash. His average speed was 109.59 m. p. h.

Victor Dallin, Philadelphia, in a Waco 9 with Curtiss OX5 engine, was second with a speed of 105.62 m. p. h., winning \$300. Casey Jones, Garden City, N. Y., in W. E. Gilmore's Thomas Morse (OX5 engine) came in third, winning \$150; Bob Hewitt, (Waco 9), fourth; Walter Beech (OX5 Travel Air), fifth; J. Ben Faulkner (Pitcairn Orio Wing 2), sixth; and James G. Ray (Pitcairn Orio Wing 1), seventh.

Casey Jones flying his clipped-wing Curtiss Oriole (C-6 engine) won the second event of the day—the free-for-all race, for two, three and four place airplanes for the Independence Hall Trophy given by Bailey. Banks & Biddle Company of Philadelphia, also \$1.000 in prize money. His average speed was 136.11 m. p. h.

James G. Ray in a Pitcairn Sesqui-Wing Arrow (C-6 engine) came second, averaging 127.81 h. p. h., winning \$600 in prize money. Walter Beech, in a Wright Whirlwind Travel Air, was third with 126.32 m. p. h. and received \$400. C. C. Champion, Jr., in a Wright-Bellanca (Wright Whirlwind engine), fourth; Henry B. DuPont in his Buhl-Verville "Airster" (Wright Whirlwind engine), fifth; and Louis G. Meister in a Buhl-Verville "Airster" (Wright Whirlwind engine), sixth.

The prize of \$50, which was given daily for the parachute jumper landing closest to the mark, was awarded to W. B. Baird, who landed 89 feet from the goal.

Alva Starr, Lakehurst Naval Air Station, made a fine jump but landed in the swamps near the parking area from which he was extracted with difficulty.

Monday, September 6—Races for Mulvihill Model, B. B. T. and National Guard Trophies

On Monday the program began with the duration race for model airplanes for the Mulvihill Model Trophy. Jack Loughner, of Detroit, was awarded first place and \$200 in prize money. His model plane remaining in the air 2 minutes 31 2/5 seconds. Joseph Lucas, Chicago, won the second prize of \$100. His time was 2 minutes 9 2/5 seconds.

Time and awards to the other contestants were: Bertram Pond, Peru, Ind., 1 minute 57 2/5 seconds, \$75; O. L. Westgate, Philadelphia, 1 minute, 38 1/5 seconds, \$50; Arthur O. Heinrich, Baldwin, L. I., 1 minute 34 seconds, \$30; Warren DeLancey, Springfield, Mass., 1 minute 22 1/5 seconds, \$20; Earl Nellis, Detroit, 1 minute 19 seconds, \$15, and Robert Hays, Detroit, 1 minute 10 seconds, \$10.

In the afternoon, a novelty race for commercial planes for the B. B. T. Trophy, given by the B. B. T. Corporation of America, proved interesting. Four teams of three planes each took part in this contest. The race was in three laps of twelve miles each. At the end of each lap the pilot landed and his passenger was required to unfasten a pennant tied to one of the struts, run 600 feet to the flying



Huff-Daland light bomber, winner of the Liberty Bell Trophy.

Casey Jones and his clipped-wing Curtiss Oriole racing plane.

line where the banner was tied on the strut of the next plane which immediately took off.

Casey Jones (Oriole) took off first in the first leg. His speed put A. H. Kreider (Waco 9) teammate, in the lead on the second lap and gave Basil Rowe (Thomas-Morse) team leader, first place with a time of 25 minutes 7 seconds. The prize for the team was \$500.

The team of the Ludington Exhibition Co., Victor Dallin (Waco 9), Jack Thropp (Waco 9) and R. P. Hewitt (Waco 9), took second place, \$300, with a time of 27 minutes 1 second. The Travel Air team, Fred Hoyt (Travel Air) E. P. Lott (Travel Air) and R. H. Depew (Fair-child), made third, \$200, in 31 minutes 1 second.

Walter H. Hendricks, Camp Anthony Wayne, took the prize for the best parachute jump of the day, dropping from an altitude of 1,500 feet and landing 577 feet from the goal. Sergeant Pearson gave the spectators a thrill when he jumped from a height of 2,000 feet and dropped 500 feet before opening his parachute.

The last event of the day was the speed race for the National Guard pilots and planes (JN4s) for the National Guard Trophy given by C. T. Ludington, Philadelphia, in which the New York National Guard won the first three places.

Lieutenant Carl W. Rach, 102nd Observation Squadron, New York N. G., finished first with 93.08 m. p. h.; Lieutenant Carl J. Sack, New York, second—89.63 m. p. h.; Lieutenant Leonard F. Long, New York, third—87.63 m. p. h.; Major D. Tipton, Maryland, fourth—85.38 m. p. h.; Lieutenant L. G. Brower, fifth—85.14 m. p. h.; Lieutenant Edwin Weatherdon, sixth—84.87 m. p. h.; Lieutenant George N. Hyland, Pennsylvania, seventh—84.71 m. p. h.; Lieutenant George Logan, Pennsylvania, eighth—83.56 m.p.h.; Major John S. Owens, Pennsylvania, ninth—83.11 m. p. h.; Lieutenant George R. Dickens, Pennsylvania, tenth—82.79 m. p. h.; Lieutenant L. W. Helwig, eleventh—82.13 m. p. h.

#### Tuesday, September 7—No Races

Due to heavy rains Monday night, the flying field was declared too muddy for safety and the races scheduled for Tuesday were postponed until Sunday, September 12th. Wednesday, September 8—Races for Aero Club of Pennsylvania Trophy, Bamberger Trophy, Aviation Town and Country Club of Detroit Trophy, Aero Digest and Betsy Ross Trophies

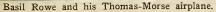
The second elimination for the Aero Club of Pennsylvania Trophy was the first race on Wednesday. Fred Hoyt, winner of the On-to-Sesqui race, in an OX5 Travel Air, won this with an average of 96.55 m. p. h. Second place was won by Douglas H. Davis in a Waco 9, (95.56 m. p. h.); Lloyd O. Yost in a Waco 9, (94.36 m. p. h.) third; John E. Thropp, Waco 9, (94.09 m. p. h.), fourth; Robert Rolando, Eaglerock, (92.16 m. p. h.), fifth; Charles C. Baughan, Waco 9, (85.68 m. p. h.), sixth. The prizes were: first, \$500; second, \$300; third, \$150; fourth, \$125; fifth, \$75; and sixth, \$50.

A. H. Kreider, Hagerstown, Md., in a Waco 9, led the race at the start of the second lap with 101 m. p. h., when his plane developed engine trouble and came down near the No. 2 pylon at Paulsboro, N. J. Kreider was not injured and returned to Model Farms to compete for the Aero Digest and Betsy Ross trophy races for light planes in which he was entered and which were postponed until his arrival.

In the military aerial acrobatic contest for pilots of the Army, Navy and Marine Corps, Lieutenant Frank H. Conant, U. S. N., was awarded the trophy given by Edgar S. Bamberger, of Newark, N. J. Lieutenant George T. Cuddihy and Lieutenant George R. Henderson, both of the Navy, placed second and third. After the prizes were awarded, Lieutenant L. H. M. Sanderson, Marine Corps. also gave a very fine acrobatic exhibition.

The most thrilling race of the program so far was the speed and efficiency race for the Aviation Town and Country Club of Detroit Trophy. The trophy and \$900 for efficiency were won by the Wright-Bellanca WB-2 monoplane piloted by C. C. Champion, Jr., and powered with a 200 h. p. Wright Whirlwind engine. Carrying a passenger load of 1,292 pounds exclusive of pilot, gasoline and oil, the Wright-Bellanca averaged 121.358 m. p. h. Walter Beech, in a Wright Whirlwind Travel Air, won the second prize of \$500 for efficiency. Henry B. DuPont







The Pitcairn Sesqui-wing, with a Curtiss C6 engine.

in his Buhl-Verville "Airster" (Wright Whirlwind engine) won the third prize of \$250.

The thrilling part of the race was the speed contest in which Jimmy Ray in a Pitcairn Sesqui-Wing Arrow and Casey Jones in his clipped wing Curtiss Oriole have a neck and neck struggle. Casey's speed for the first lap was 133.448 m, p, h.; Ray's, 127.962 m, p. h. Second lap— Casey, 133.52; Ray, 132.462. Third lap—Casey still in the lead, but Jimmy eating up space. On the last lap, Ray passed Casey's Oriole and won with an average speed of 136.372 m. p. h. Casey's average was 132.148 m. p. h. Their time was: Ray, 42 minutes 23 seconds: Jones, 43 minutes, 35 seconds, Prizes-\$500, first and \$250, second. Walter Beech, Travel Air, scored third, (127.268 m. p. h.); Thomas Carroll, Vought UO1, fourth, (121,499 m. p. h.); C. C. Champion, Jr., Wright-Bellanca, fifth, (121.385) m. p. h.); and Henry B. DuPont, Buhl-Verville "Airster." sixth, (118.665 m. p. h.).

The Aero Digest and Betsy Ross trophy speed and efficiency race for light airplanes took place late in the afternoon. The winner was E. B. Heath, in a Heath Sport monoplane with Bristol Cherub engine. He maintained a speed of 91.29 m. p. h. and an elapsed time of 32 minutes 51 seconds. He was awarded both the Aero Digest Trophy for speed, given by this publication, and the Betsy Ross trophy for efficiency, given by Jacob Reed's Sons, Philadelphia, and \$1,000 in cash prizes. A. H. Kreider in his KRA monoplane with Wright-Morehouse engine, was a close second with 90.70 m. p h.; he won \$550. Jack Laass, piloting the Driggs Dart, Wright-Morehouse engine, came in third (85.62 m. p. h.) and won a \$275 cash prize. They finished in the same order for efficiency.

Charles W. Meyers in the Meyers Midget (Bristol Cherub engine) was forced to land when his engine suddenly quit on the sixth lap. He landed in an obstructed area without personal injury. The wings of his plane were badly smashed.

THURSDAY, SEPTEMBER 9-RACES FOR AERO CLUB OF PENNSYLVANIA TROPHY, VALLEY FORGE TROPHY, AND LIBERTY ENGINE BUILDERS' TROPHY

The final contest for the Aero Club of Pennsylvania Trophy was the first event on Thursday afternoon. Robert

P. Hewitt, of the Ludington Exhibition Company, in a Waco 9 won the trophy and \$1,000 in prize money, averaging 107.516 m. p. h. His time for the 84 miles was 46 minutes 56 seconds. Basil Rowe in his Thomas-Morse was second and won \$600—average speed, 104.32 m. p. h.

Third man was Casey Jones in a Thomas-Morse, OX5 motor, winner of a prize of \$400 at a speed of 96.61 m. p. h.; Fred Hoyt in a Travel Air came fourth with a speed of 94.045 m. p. h.

In the precision landing contest for the Valley Forge Trophy given by Dr. Thomas E. Eldridge of Philadelphia, Douglas Davis won the contest and \$200, landing 5 feet from the mark. James Ray in the Pitcairn Orio Wing 2 came within 7 feet of the mark, and won \$150. C. C. Chamberlain in a Bellanca biplane came within 7 feet 10 inches of the mark and won \$100.

The Liberty Engine Builders' Trophy Race for observation type planes followed—one of the most spectacular exhibitions of military flying. First prize went to Lieutenant O. L. Stevens, Mitchel Field, in a Curtiss Ol, averaging 142.633 m. p. h. Second prize was captured by Captain Aubrey Hornsby, Maxwell Field, (Curtiss O1) 142,83 m. p. h. Third-Lieutenant G. T. Owens, U. S. N. (DH Special) 140.526 m. p. h. Fourth-Major J. H. Pirie, Duncan Field, (Curtiss O1) 138.661 m. p. h. Fifth—Captain J. J. Colgan, Philadelphia, (Curtiss O1) 132.277 m. p. h. Sixth-Lieutenant G. S. McGinley, Crockett Field, (Douglas O2) 129.219 m. p. h. Seventh-Lieutenant L. S. Webster, Langley Field, (Douglas O2) 126.987 m. p. h. Eighth-Lieutenant P. E. Skanse, Bolling Field, (Douglas O2) 124.998 m. p. h. Ninth-Lieutenant H. G. Peterson, Rantoul Field, (Douglas O2) 122.083 m. p. h. Tenth-Lieutenant R. L. Fisher, Marshall Field, (Douglas O2) 120.361 m. p. h. Eleventh-Major J. M. Reynolds, Fort Sam Houston, (Douglas O2) 119.357 m. p. h. Twelfth-Lieutenant J. D. Cornwall, U. S. N., (Vought UO1) 115.592 m. p. h. Individual trophy awards were given to first, second, third and fourth place winners

FRIDAY, SEPTEMBER 10-RACES FOR THE LIBERTY BELL TROPHY AND JOHN L. MITCHELL TROPHY

On Friday afternoon the U. S. Navy dirigible Los An-



Photos by Dr. Gehrung.

At the races: (top row)—the Waco 9; Alexander Eaglerock; U. S. Navy dirigible, "Los Angeles." (bottom row)—Meyer's Midget; Kreider-Reisner light plane; Ford tri-motored transport.

geles arrived from Lakehurst. Two hundred sailors and marines pulled the huge airship to the ground and held it there while it was ballasted with water. Commander C. H. Rosendahl was in charge and Lieutenant Commander H. V. Wylie, its navigator.

Another visitor was the ill-fated Sikorsky S-35 which flew over the field on its return trip to New York from

Washington, D. C.

The first race was for the Liberty Bell Trophy given by John Wanamaker for large capacity military planes. It was won by Lieutenant L. M. Wolfe, McCook Field, in a Huff-Daland LB-1 (800 h. p. Packard engine) with an average speed of 123.714 m. p. h. His flying time around the 120 miles was 58 minutes 11 seconds. Lieutenant Kenneth Walker, Langley Field, who also flew a Huff-Daland LB-1, was 1 minute 52 seconds behind Lieutenant Wolfe. His average speed was 119.689 m. p. h. Lieutenant J. M. Davies, Huff-Daland LB-1, placed third, being only 51 seconds behind Lieutenant Walker—average speed, 118.66 m. p. h. Captain F. I. Elgin, Kelly Field, (Douglas C-1, 400 h. p. Liberty) was fourth—average speed 114.819 m. p. h. Lieutenant E. M. Morris, (Douglas C-1) fifth, 111.151 m. p. h. Captain Ralph Wooten, (Douglas C-1) sixth, 110.320 m. p. h. Individual trophies were given for the first four placing in this event. During the race, Lieutenant Alford J. Williams thrilled the crowd with acrobatic stunts.

The last race, for the John L. Mitchell Trophy, given by General William Mitchell in memory of his brother who was killed in the World War, took place at nearly six p. m. The contestants were all flyers of the First Pursuit Group, Selfridge Field, flying Curtiss P1 type planes equipped with Curtiss D-12 engines.

The winner was Lieutenant L. G. Elliott, making an average speed of 160.38 m. p. h. Captain F. H. Pritchard, second, 160.121 m. p. h. Lieutenant J. J. Williams, third, 159.992 m. p. h. Lieutenant W. L. Cornelius, fourth, 159.226. Major T. C. Lanphier, fifth, 158.621 m. p. h. Lieutenant K. J. Gregg, 158.512; Lieutenant L. H. Rodieck, 158.162; Lieutenant V. H. Strahm, 158.123; Lieutenant Luther S. Smith, 157.070. Individual trophy awards were also given in this race.

SATURDAY, SEPTEMBER 11—RACES FOR DETROIT NEWS AIR TRANSPORT AND KANSAS CITY ROTARY CLUB TROPHIES

The Detroit News Air Transport Trophy race for speed and efficiency opened Saturday's races. C. C. Champion, Jr., piloting the Wright-Bellanca won the trophy for speed and efficiency and \$1,500, covering the 120 miles in 59 (Continued on page 332)



A dozen of our own snapshots at the races.

(1) A policeman at the flying field entrance directs traffic with a red AERO DIGEST poster. (2) The Judges' stand. (3) Will Rogers of AERO DIGEST and pilot "Vic" Dallin who, dressed as a "society girl", staged a "runaway airplane" stunt. (4) "Doc" Kinkaid tunes up the Wright Morehouse engine on the Driggs Dart. (5) Michael Watter, a Vought engineer, flew with Champion in the Wright-Bellanca during the efficiency race. (6) The Martin Bomber lays a smoke screen over the field, (7) Model fliers from England compete in the model races. (8) Seversky, the prominent Russian airplane designer. (9) General Mitchell is a guest of honer. (10) Lt. Sanderson, U.S.M.C. (11) Lt. Conant, U.S.N., pursuit ship pilot. (12) R. R. Rolando.

# ATERO DIGEST

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#### WHAT WE NEED

THE NATIONAL AERONAUTIC ASSOCIATION has missed the opportunity to become a power sufficient in aggressive force to properly represent and serve those interested in the advancement of this most useful of all industrial arts. It has proclaimed by its recent actions that it is willing to be made the tool and servant of that useless and antiquated bureaucracy in the Navy, who realize the advancement of aeronautics as a method of national defense means the end of the three hundred and sixty million yearly appropriations and with that the elimination of extravagance and waste.

It is therefore obvious to us that a new organization must be formed which will lead the country to real aeronautical development and the industry to real prosperity.

We believe that an organization apart from that made up of those devoted wholly either to the Army or Navy can do more to bring into being the splendid vision that we see, than can any organization alleged to be civilian but dominated wholly by the Navy.

It must be one that honestly will represent all manufacturers and the industry in general without fear or favor; that will procure and have ready at all times for dissemination to the public all available information concerning the technical, commercial and other development of aeronautics in all parts of the world; that will organize the nation's vouth to intelligent air-mindedness (the N. A. A. after four years has approximately 20 junior members when it should have a quarter of a million); that will give the pilot and all workers connected with operation and development of aircraft representation in Washington whenever legislation is proposed which may affect their interests, irrespective of whose toes may be smashed if actual facts are dropped in the committee rooms or on the floors; that will urge Congress to carry out the legislative program of the 69th Congress concerning aeronautics and prepare for presentation to the 70th Congress such additions and amendments as the lapse of time reveals as necessary; that can and will strive to bring together all the independent air clubs and societies now existing but unaffiliated with the N. A. A. or anything else, because they know of nothing worth affiliating with, a fact to be regretted, but nevertheless so. The dues must be made nominal-\$1.00 per year is sufficient, and its goal for membership should be 250,000 per year.

And for this organization, now that the N. A. A. has proclaimed its shame, we should endeavor to secure a head fitted to command and competent to demand the respect and not the sympathy of the various congressional committees and determined to work sympathetically and efficiently with all for the development of the art and industry in which we are interested, for the defense and welfare of this nation and for the creation in this country of the most intelligently air-minded younger generation in the world.

The writer of these words does not believe that in the whole United States there is anyone so well qualified to head

this new and necessary organization as General William Mitchell and believes that General Mitchell can be prevailed upon to serve if it can be demonstrated to him that its purposes are patriotic, its plans well devised and its future certain to be kept free from the taint of the self-seeker, the bureaucrat, the service propagandist and other parasites and pests that have endeavored to hamper every effort to give to the United States, homeland of the airplane, a decent military air force, competent naval air strength, and a commercial air development commensurate with our needs and our prosperity.

#### ADVERTISE THE AIR MAIL

WHEN the United States consisted of the Pilgrim Fathers and a few Indians the business of the nation could be done by word of mouth. But even then it paid to advertise and the pulpits and the platforms which reached their greatest glory in the America of bygone days proved that our forefathers knew it.

Now the Government of this nation, with an eye to the increase of our national efficiency, has begun to develop the Air Mail. It is growing. It will grow steadily; but it might grow fast if it were advertised. Both the Government and the Air Mail contractors are interested in this matter. It's the only way the thing can be accomplished at high speed.

Assistant Postmaster General W. Irving Glover put his finger on the weak spot of our present Air Mail effort when he declared in an address delivered to the National Association of Postmasters at Kansas City, Sept. 23rd:

"What is needed is an advertising campaign greater than all the contractors combined could afford to finance, an advertising campaign to sell air transport of mails, express packages and passengers in this country to the public which would benefit from such a development. . . Air transport is brand new. It has to be sold to the people just like a brand new toilet soap, a brand new breakfast food or a brand new chewing gum. . . When a great commercial company starts to popularize a new idea the first man hired is the best advertising man obtainable and the first work done is the preparation and placing of the advertising copy.

"Great sums have been set aside for the development of aviation. A portion of these sums should be used in a campaign for the sake of commercial aviation to the American people. . . . The development of our flying organization under the administration of the Commerce Department will far outstrip the growth of the business to be handled by it—unless we ADVERTISE."

That is high horse power horse sense.

#### THE S-35

PIONEERS must die in each of the great human efforts. All have claimed their toll. Aviation has had its share of tragedy as ocean navigation, the railways and motor transport have had theirs. Men take their chances with their lives and their money. Often those of each which are lost bring to the world the biggest of returns. The dream of a non-stop Atlantic flight which came to a cinderous naught upon Long Island, costing two fine young lives, was none the less a dream that soon will be reality.

With the surviving relatives of the dead men we sympathize most profoundly.

The disaster was a great blow to Igor Sikorsky, designer and builder of the plane which burned. To him and his able associates Aero Digest extends the hand of sympathy as it often in the past has reached toward them that of congratulation.

# A NOD AND A WINK

HILADELPHIA doctors report a startling increase in the number of patients suffering from narcolepsy, a nervous disorder characterized by sudden attacks of irresistible drowsiness. The sufferers fall asleep in the most unexpected places. Last Sunday 2,654 narcoleptics were removed in a somnolent condition from several Philadelphia churches, although the former average number of clerical

sleepers in that most Christian town has been only two dozen per Sunday. This average has been maintained for years and has been a source of pride, for in such unregenerate places as New York and Chicago it is not unusual to find whole congregations snoring unanimously. There it is to be expected, and no one thinks anything of it. But such a condition is unknown in Philadelphia the city of brotherly love and twilight sleep, where a sermon is the only thing that will keep them awake. So when man after man leans his head on his neighbor's shoulder, or even on his neighbor's wife's shoulder, and goes to sleep, the thing becomes serious.

Someone who knew my standing as a pathologist advised the doctors to apply to me for assistance and as I have specialized in vegetable-pathology I was able to study these sleeping Philadelphians and suggest a cure. However, I do not consider a cure advisable. If a man must live in Philadelphia I believe that he will be much happier asleep than awake as he will be more in tune with his environment, so who am I to destroy a man's pleasure? I left them asleep, and if others would wake them, let them do it.

But to me the interesting study was how these sleepers got that way. I found that all of them had attended the National Air Races which cleared up the mystery at once, for that narcomatous carnival of sleeping-sickness was enough to put the strongest and liveliest person into a permanent coma. I attended it myself and even now, a week later, I am rubbing my eyes and asking if it's time to wake up. Only this morning I fell asleep in the subway and awakened with my head pillowed on the whiskers of a gentleman who, I should judge, must have been in the fish business on the lower East Side.

It would be tactful and kind, I know, to say nothing about the Narcotic Air Races, under the ruling that silence is golden. But I owe a sacred duty to the six or seven devoted readers of these inane columns who weren't able to go to Philadelphia and who have been feeling very sad because they missed the races. I must bring joy into their lives by telling them at once that they have missed nothing. Not that the races were not as interesting or as uninteresting as such events usually are. They were good. But when three days' races are dragged out to nine weary days, including a Sunday of inactivity in Philadelphia, well—bring on the ambulance and stretcher bearers. Imagine wading around in the mud for six hours to see only two races!

They were dragged out purposely to extract as much money as possible from the public, and, incidentally, to discourage people from going to another race. Although the public likes to be fooled, as Mr. Barnum discovered, they prefer to be fooled entertainingly. I don't believe that any cash customer came back for a repeat dose. No one would pay more than once to be bored unless he had an

Aeronarcotics

intellect somewhat inferior to that of a cockroach.

Although I had a pass for the entire nine days and was paid for being there, after the third day I offered to pay my own salary and hotel expenses and even give a bonus if I could be let off the remaining days. So this story is only partly observation, the rest being related to me by Jack Laass, Captain Rickenbacker, Fred Hoyt, Walter Beech and other sturdy lads who braved the sopori-

fic influences for the rest of the meet. They tell me they could hardly hear the motors above the snoring of the

What flying I saw was excellent, for which credit is due to the pilots, not to the management. But a small ration of good flying does not compensate for large rations of boredom and inactivity. A bunch of clowns doing small time vaudeville did their best to keep us awake during the dragging periods, but unfortunately most of us were over twelve and had outgrown this brand of entertainment. To the race officials the clowns were doubtless very amusing or they wouldn't have hired them, but, as I say, the rest of us were too old to appreciate these infantile antics.

Then there was an announcer who tried to stave off the narcosis that descended upon us. He was even driven to giving recitations on snores and sneezes, which were appropriate, as half of us were asleep and the other half were catching cold from wet feet. But, after all, the crowd had paid to see races, and they felt that the race officials were expecting too much of one man when they left him to produce almost the whole show. The result was that most of the veteran race goers preferred to attend the various speed events run off in rooms 217, 317, and 707 of the Bellevue-Soakford.

The races were held on Model Farms Field and Horse Infirmary, according to a sign at the gate, though apparently it had grown too muddy for horses, for I saw none present, unless there were sea-horses out in the ponds that spread over the landing field. A modern note was supplied by about 3,000 confiscated stills piled up for destruction. You could hear the boys sighing as they walked by that lot.

I can't conceive how anyone with experience selected such a location for an air race. It is a marsh below the level of the Delaware River from which it is protected by dikes, though there must have been a large hole in one of them. An amphibian plane couldn't get off at all. There was too much water for the wheels and not enough to float the hull. The airplanes did better, being lighter, but you could look out across the field any time and see one or two planes standing on their noses and motor-cycles splashing madly to their assistance. I believe these races did much to advance the efficiency of motor-cycles. The heavy bombers didn't dare land on Muddle Farms Field, but took off from the Navy Yard and started their race from a flying

Philadelphians who visited the field said it was all virgin territory to them, and that it must have been discovered by Byrd and Bennett, the great explorers. The oldest inhabitant said that he had heard of it as a marsh used for snipe-shooting in the fall, and was surprised to see it at (Continued on page 337)

### THE INK WIRING REPORTER

THE following question was asked:
"How did you like the National Air
Races at Philadelphia?"

Frank H. Russell (Curtiss Aeroplane & Motor Company):

"Ask Casey Jones, He knows."

Don Alexander (Alexander Aircraft Company):

"You should have seen the Denver Races."
G. S. Ireland (Garden City):

G. S. Ireland (Garden City):
"Thank Heavens for commercial aviation.
We don't race."

E. N. Gott (Fokker Aircraft Corporation):

"No Fokkers. No Races."

Thomas H. Huff (Huff Daland Airplanes, Inc.):

"We entered one race. We won first, second and third. That's all. We like 'em."
W. L. Gilmore:

"Airplane races are always interesting but 'Zippers' are more profitable!"

Capt. Eddie Rickenbacker (Detroit Aircraft Engine Works):

"They will be much better next year when the planes are all equipped with Rickenbacker motors."

Lt. Elliott Springs (American Ace):

"Air Races did you say. I thought the pond was built for Gertrude Ederle to give exhibitions in."

Capt. George H. Usher (New York National Guard):

"What would they have been without the 27th Division's first, second and third place in the National Guard Race?"

Bob Hewitt (Ludington Exhibition Company):

"The weather was heastly—'cause it rained cats and dogs."

Shannon Cormack (New York Times): "I played bridge at night and wished I had one in the daytime."

"Cy" Caldwell (Aero Digest):

"Many merry men made Moducks muddle meet mirthful,"

Bill Arthur (Wm. E. Arthur Company): "Don't blame me—I didn't engineer the drainage of this field."

#### "Dick" Blythe

At the National Air Races



J. E. Whitbeck (Wm. E. Arthur Company):

"Nor did I."

C. B. Allen (New York World):

"What races?"

A. J. Ritchie (General Electric Company):

"Hope nobody got their fingers burned." Roy Hurley (B. G. Spark Plug Company):

"B G D races R all O.K."

Fred Hoyt (Eureka, Calif.): \*

"When my ship came in I got a rait of congratulations."

Colonel T. H. Britton (St. Paul):

"Diogenes would have had a 'Happy Hunting Ground' at the Air Races."

Luke Christopher (Huff Daland Airplanes, Inc.);

"The ships were in the air, 'Swanee' was on the air, and the public was up in the air."

Ralph Cram (Davenport, Iowa):

"I think my daughter had a good time."

Gloria Swanson (moving picture star):

"I think publicity men and air races are very thrilling."

Captain G. H. Wilkins (Detroit Arctic Expedition):

"Well, I'll take arctic explorations for mine."

Doc Burka (McCook Field):

"My 'snapping turtles' don't like water."
Major Tom Lanphier (Selfridge Field,
Michigan):

"I have discovered the 'wise-cracking' pilot isn't always a 'cracking' good pilot."

E. B. Heath (Heath Airplane Company): "Allah be praised—and Aero Digest be

thanked."
G. M. Bellanca (Wright Aeronautical

Corporation):
"Yes, sir—that's my baby."

Jack Laass (Fairfield, Ohio):

"And to think I flew the Alleghenies to get here!"

Gould Dietz (Omaha, Nebr.):

"Now I know why they call an airplane 'she.' Because as long as she makes a noise she's healthy—but when she becomes silent—Look Out!"

George Post (Huff Daland Airplanes, Inc.):

"The news of the air races came to many as a bolt from the sky."

Ernest Robinson (Fairchild Aviation Corporation):

"I have a very good picture of the results."

Walter Barling (Dayton, Ohio):

"Some planes are not all they're 'cracked up' to be."

Commander Alexander Seversky:

"Did anybody see the boys' rubber band races?"

Thomas Hamilton (Hamilton Aero Mfg. Company):

"A prop in time saves nine."

J. H. Turner (Wichita, Kansas):

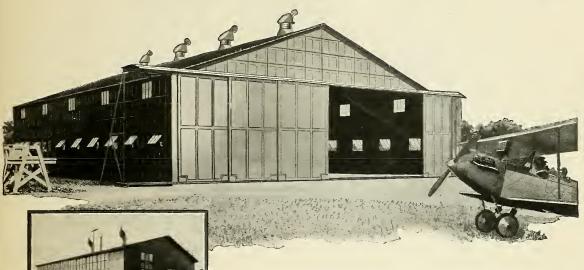
"Walter Beech and a few Travel Air planes would make any meet successful."

Brice Goldsborough (Pioneer Instrument):

"Next to my instruments I enjoyed my Packard crooked eight."



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Truscon Buildings assure firesafety with economy. Types to answer any requirement can be furnished. Truscon Engineers gladly cooperate with you.

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# ACROSS THE ALLEGHANIES

HOPPED off from the Dayton Municipal Airport at 4:30 in the

day, August 27, bound

for the National Air

Races where my little "Dart" monoplane was

to be flown in the 80-

cubic inch class light

plane races. My flight

to Philadelphia, how-

ever, was a more severe

test than the races where

landing places were

nearly always at hand. I

arrived at Columbus against a light head wind

an hour and fifteen min-

utes later. The west

looked dark and threat-

ening skies prompted

By Jack Laass afternoon of Fri-



The Driggs Dart which Laass flew in the Ford Tour and then over the Alleghany Mountains to Philadelphia.

me to stay over night at the landing field in Columbus. Hoping to make Washington, D. C., the next day I took off at 8:30 the next morning without waiting for the weather report. An early morning shower greeted me at Cambridge, Ohio, about 35 miles from Moundsville, W. Va., in the vicinity of the Shenandoah disaster. Low visibility brought me down in the valleys over the National Highway into Wheeling, where I followed the river to Langin Field. An hour after landing the sky had cleared and allowed procedure to Uniontown. Weather conditions eastward were reported "dangerous to flying" and well they might have been called that.

Before landing I flew over the first ridge, which rises just east of the city, only to be driven back by fog in the valleys and low clouds which covered the high peaks. The first mountains encountered require an airplane to have an altitude of at least 2,000 feet. I could not get more than 1,500 without going up through the clouds. Not knowing how thick they might be I hesitated to risk the little ship which was to compete for the Aero Digest trophy.

Although on slightly hilly ground the field at Uniontown was a sea of pools left by three days of continuous showers. I stored the little rascal in the newly-built hangar and anxiously scanned the weather reports, which I found to be not in the least favorable for flying. This was Saturday, August 28, and on Tuesday the little "Dart" was scheduled to fly in one of the races for light airplanes.

An anxious Sunday was spent in Uniontown studying weather reports. Three commercial and two army ships beside the "Dart" were at Burgess Field waiting for a chance to cross the high peaks of the nearby mountains.

Unfavorable flying country is encountered east of Moundsville which continues to Uniontown, where the first ridge of the mountain rises abruptly to 1,800 feet. The ridges rise higher and higher until, I believe, the highest peak is about 5,000 feet. There are few fields along the 60mile stretch from Uniontown to Cumberland that are suitable to land a ship safely; and when once landed the shortness of the fields greatly lessens the chance of taking off.

After a hard shower, on Monday at 2. p. m., the sun came out and a strong south wind blew the clouds over the first ridge so that the peaks could be seen. This was encouraging, so I took off at once to see what lay on the other side of the ridge. After the necessary altitude was reached, over the peak we went. Off to the south I observed black clouds rolling

> in. Upon reaching Confluence a solid wall of clouds was encountered. At first I tried to climb over the clouds-it was impossible to go under them as they were right against the mountain tops. Occasionally a hole would open up which I anxiously watched, keeping careful tabs on the little pocket compass strapped to my knee and the altimeter on the instrument board.

> After ten minutes of this I knew it was useless to attempt to return.

The dark clouds off to the south had arrived with their rain which showered against the cabin and obscured my vision.

All was black behind me, dark and forboding to the south, equally black to the north, mountains with scraggy peaks and trees below, and clouds all around.

All I could do was to try to keep on my compass course, although the needle was vibrating so that I could determine only my general direction.

After what seemed an hour I saw a light spot in the clouds a few points to the south. I shot for it and looking to the south saw the ground again—a most welcome sight. A few minutes later the clouds were less thick and from 500 feet I looked down upon the river and Cumberland.

At least my mountain trouble was nearly over. As I continued my flight the clouds gradually dispersed but the air became very rough and bumpy.

Another rainstorm was coming up swiftly from the south so I flew northeast to avoid it. As I went over Brunswick I saw that my oil pressure was dropping. I had not the speed to fly ahead of the storm and around it. Lightning flashes indicated a tough storm. At Lucketts, on the Potomac, the lighting struck fiercely, the oil pressure was "minus" and there was every reason for me to expect my engine to quit any second. I sighted a long field in which to set the ship down. The rain poured in torrents. It was impossible to do anything but guess and hope that the field was clear and free from ditches. I hadn't time to look the field over before landing, the storm struck so suddenly.

While waiting for the storm to blow over I took the opportunity to get three quarts of oil for my engine. At 5:30 I took off again for Bolling Field. Three hours later I landed at Bolling in the dark.

At seven o'clock next morning (Tuesday, September 2) the day of the first race for light planes, I left Bolling Field, landing at Model Farms Field just two hours later, where I learned that the events of the day had been postponed because of the muddy condition of the field.

The airplane and its engine stood up well under the strain of flight through rain and wind. Not once had the Wright-Morehouse engine missed. Not a drop of rain found its way into the cabin, which is enclosed with pyralin. A faithful little motor, weighing less than 30 pounds and developing 28 h. p., and a well designed plane carried me over the dangerous mountains in safety.

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# MEYROWITZ LUXOR GOGGLES

are worn by America's best known pilots

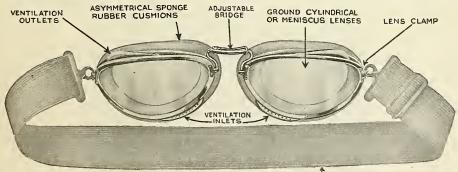


"Casey" Jones at the finish of the Free-for-all race at the National Air Races, Sept. 4th, which he won with his Curtiss "Oriole" flying at an average speed of 136.11 miles an hour

around a 12-mile course 5 laps, a total of -60 miles. "Casey" Jones is one of the best known airmen in the United States—a typical American commercial pilot. He wears the

# NUMBER 6 U.S. AIR SERVICE MODEL

ORIGINATED AND MANUFACTURED EXCLUSIVELY BY E. B. MEYROWITZ



EXTRA WIDE CONTINUOUS HEAD BAND

#### U. S. Air Service Model 6

#### LUXOR Goggles No. 6 (Regular Model)

With first quality white lenses... \$9.75 With first quality tinted amber or euphos (green) lenses....10.50

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With first quality white lenses. \$6.75 With first quality tinted amber or euphos (green) lenses ...... 7.50



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# RICKENBACKER ENGINE TEST-FLOWN

HE light-weight, medium horse power, radial air-cooled motor has made its appearance and with its production a noteworthy step forward has been made in commercial aeronautics.

The new motor is the Rickenbacker 5-cylinder, 60 horsepower, radial, air-cooled. It develops 60 horse power at 1,650 revolutions per minute and approximately 75 horse power at 2,400. It weighs less than 180 pounds ready to

fly.

The Rickenbacker motor was designed by Captain E. V. Rickenbacker, America's premier war ace, and Glenn D. Angle, formerly in charge of the engine section at McCook Field, Dayton, Ohio.

The first ship to be powered with it was the newest of the Driggs planes, the Driggs Coupé, built by the Driggs Aircraft Co., Dayton, Ohio. This ship was recently flown

from Dayton to Detroit, 220 miles, by Jack Laass in two hours and a half. He averaged 15 miles to a gallon of gasoline and used only one pint of oil. Laass test-flew the ship once, found the motor was working nicely so he started for Detroit. shows plenty of confidence to do that with a motor just off the block," he said. "Another thing that I like about it is that I don't know of any other motor of only 60 horse power that ever pulled a load

Harold J. Wymer

through the air."

Ivan H. Driggs, designer and builder of the ship, said:
"The motor is just what we have been looking for. With

of 1,500 pounds off the ground and car-

ried it at the rate of 85 miles an hour

its simple maintenance and great accessibility, it fills a great gap in the ranks of American aviation engines."

It is generally conceded that the cabin cruiser will be the future airplane either for short or long air journeys. It may be assumed that the cabin ship will be small—only large enough to carry six or eight persons and luggage, mail

and express. The ships will have to be of the three-en-

gined type to be reliable and cut down forced landings. To

the designer of a medium sized cabin cruiser the Ricken-

backer motor solves the expense problem as well as the reliability angle.

In size the engine is ideal because it is adaptable to a

wide range of application and several methods of installation. The motor is under 30 inches in overall diameter. The cylinder bore is four inches and the stroke three and one-half. This gives a total piston displacement of 220 cubic inches. It has fewer parts than the average automobile engine and may be repaired by a mechanic of ordinary ability.

There are several unique features of the motor. The (Continued on page 332)



With wings folded the Driggs Coupé is easily stored.



Rickenbacker and Driggs seated in the Driggs Coupé.



Capt. E. V. Rickenbacker, Glenn D. Angle and Ivan H. Driggs.

#### THE FIRST

# 'AIRCO'

TWIN-MOTORED AMPHIBIAN
WILL BE READY FOR TEST FLIGHT THIS MONTH



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AND KAUFMANN & BAER COMPANY, Inc., PITTSBURGH, PA.

# THE YARNS OF "HELL'S BELLS" O'NEIL

ADET SMITH, V.C.." says "Hell's Bells," "knew the inside dope on all things holy and unholy. Fill his glass and he would tell

you why Adam bit the apple and how Noah learned to navigate.

"Just as if we hadn't enough trouble, one night he gave us the lowdown on how the R.A.F. happened to be formed.

"'You've heard of the Navy?' he says, 'and that ought to be enough. But there are navies and navies and one of them is the Royal Navy which is run by a lad named George Five who is a fair enough fellow to work for although he doesn't pay high salaries. Well, it seems that this here Royal Navy started with the Flood and kept going. God once held a bosuns rating in it but an admiral had him broken for back talk—which may or may not be sacrilege—depending, of course, on how you feel about admirals.

"'Now it seems that the Royal Navy decided to fly, so they bought three blimps and a distillery in Scotland and sat down to table. That was called the Royal Naval Air Service which turned into one of the wildest flying outfits in the world although they would hang on to those blimps.

"Now the Royal Flying Corps never liked the R. N. A. S. very much for several reasons. The Navy, you see, was the senior service. If you were a Second Lt. R. F. C. your equivalent rating in the Navy ranked you by one full grade. Also the Mess was divided into a gun-room and a ward-room. Lieutenants had to eat in the gun-room and were only allowed to get drunk twice during any one given evening. Furthermore if you were in the R. F. C. (which was the Army), you had to stand up to drink the King's health whereas according to ancient tradition the Navy remained seated and be damned to you. On the night of the First of April, 1918, the gods that sit in

London decided that the R. F. C. and the R. N. A. S. should be merged into the Royal Air Force, wear a pink uniform and lied own thereafter, like the lion and the lamb, in the same gutter.

"'Well, the Navy said it would be damned if it did and London said it would be damned if it didn't and the order went through. At midnight it took effect.

"'I really think that the O. C. of the Naval 'drome I was at expected the

How the R. A. F. was Formed

# Iames Warner Bellah

world to end before midnight. He'd been in the Navy for twenty years and at midnight he was to be out of it. He swore and yelled and wept. He broke

four tables and his own right fist. He called upon the shades of Lord Nelson and Sir Francis Drake to help him through the evening.

"'Now this is a sad story'—Cadet Smith paused and reached for the vino-'a very sad story, my friends. As a matter of fact, the O. C. was so distracted he took to drink. To be exact, he took to all the drink in sight and the other eighty-four flying officers stood behind him to a man. At ten-thirty there was no one under the rank of Flight Lieutenant who could mutter or lift an eyelid, whereupon the survivors huddled together at the O. C.'s table and wept into neat brandy. At eleven-thirty there were six officers still drinking with the O. C. but none of them knew their names nor what war they were in.

"'On the stroke of midnight the O. C. rose to his feet whereupon three of the last six fell under the table. "Gemun!" said the O. C., "Sdamshame. Englunspexeymandosduty. Stoord! Bringmelivebelt!"

"'Where the steward got it from no one knows. It was an inland aerodrome. Nevertheless the life belt came and the O. C. strapped it around his waist. By that time there were only two other officers on their feet. Together, the three walked out of the wardroom door and across the 'quarter deck' which was a grass plot in front of the Ship's Offices which were a row of huts. On the far side of the 'quarter deck' there was a lookout tower that mounted a machine gun during air raids. From somewhere, the O. C. produced a tin fog-horn and started up the ladder to the tower with the other two behind him.

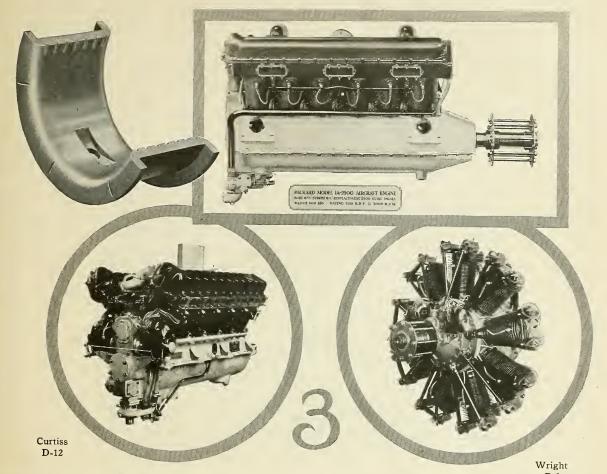
"'They do say that the old Naval Johnnie, blotteaux as he was, sounded 'Abandon Ship' on the fog horn—but who was left sober enough to know is not told.

"'We found him next morning with the other two. The O. C. still had his life belt on and the fog horn in his hand. All three of them were sound asleep on top of the Tower. They had lashed themselves to the machine gun mounting to keep from being washed overboard and they had covered their faces union jack."

"Well," says "Hell's Bells," "fill 'em up again and I'll tell about Dizzy Jones' courtmartial (In the November issue).



"Nevertheless the life belt came and the O. C. strapped it around his waist."



Great Airplane Engine Manufacturers have accepted Ring True Bearings as Standard

BESIDES supplying BOHN Ring True bronze-back babbitt-lined bearings to most of the manufacturers of automobiles in the country — Ring True bearings have been accepted as standard by these three outstanding aircraft engine manufacturers.

BOHN PRODUCTS include Ring True Bearings, interchangeable and standard type, bronze, babbitt-lined—BOHNALITE castings, both permanent mold and sand—NELSON BOHNALITE Pistons—we also manufacture replacement bearings and pistons for the Liberty Motor.

# BOHN ALUMINUM & BRASS CORPORATION EAST GRAND BOULEVARD, DETROIT

# THE HEATH SPORT PLANE

PILOTED by E. B. Heath, president of the Heath Airplane Company of Chicago, the Bristol Cherub-engined Heath light plane "Tom Boy" won the Aero Digest Trophy for speed at the National Air Races; it also won the Betsy Ross Trophy and the Dayton Daily News Trophy. The little plane was designed by Clare Linstedt, chief engineer, and E. B. Heath. It was built in the Heath Company's shop under Mr. Linstedt's supervision and is

undoubtedly one of the trimmest little ships brought out this season. It is stream end throughout and neither struts not cables mar its beauty nor cause resistance.

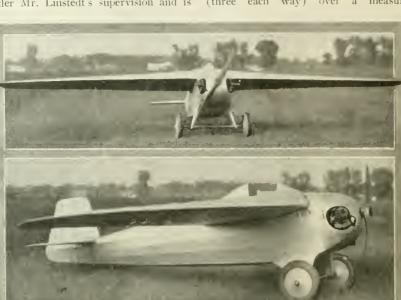
The ship was built with care and skill to get every ounce of performance out of it and keep the weight down to a minimum. The fuselage structure itself weighs only 22 pounds yet it is as strong as any big ship in comparison. The

fuselage is of the Warren truss type, having spruce longerons and struts and three-ply gusset plates. It is covered with fabric and finished with silver pigmented dope.

The nose is well streamlined with aluminum cowling giving a bullet-like appearance.

The wing is of the cantilever monoplane type built in one piece, tapering from the root to the tips in both plan and section. The wing contains two spars. The front spar is tubular in section and it forms the leading edge. The rear spar is of the rectangular box type, its greatest depth being 10½ inches at the root. The pilot's cockpit is built right into the central portion of the wing, the seat being located between the spars. Part of the turtleback is also contained in the wing. The ailerons are built to conform with the contour of the tapering wing. All control cables and pulleys are contained inside the

The tail unit is also of cantilever construction with no outside bracing and here too all cables have been carefully kept out of sight. The landing gear is simple but sturdy. It is only 10 inches in height and built in a unit with the fuselage. With wheels and axle removed, the landing gear is small enough to pass through an ordinary doorway. No brace wires are required between the landing gear struts but it is capable of withstanding the shocks of landing on rough fields.



The Heath light plane "Tom Boy" powered with a Bristol Cherub engine.

A specially designed Heath propeller was developed to show the maximum efficiency at the high speed expected of this sport plane. It is understood that in the National Air Races, the triangular course followed cuts down the maximum high speed of which the ship is capable. Before the races, however, unofficial speed trials were timed with stop watches over a four-mile rectangular course and six trials (three each way) over a measured mile, showed

an average speed of 109 miles per hour.

The Bristol Cherub Series III engine is used. This power plant is an air-cooled twincvlinder opposed horizontal engine with an aluminum head and overhead valves. It has a bore and stroke of 3.54" (90 mm.) by 3.80" (96.5 mm.). Total stroke volume. 75 cubic inches (1.228 cm.). The compression ratio is 5.5 to

The normal brake h. p. at 2,650 r. p. m. is 29; maximum b. h. p. 34, at 3,200 revolutions per minute.

Lubrication is by pressure system with two pumps. A special Zenith carburetor is used. Ignition is

by a double pole high tension magneto with two spark plugs for each cylinder.

Without oil the engine weighs 95 pounds. Gasoline is consumed at the rate of 1.75 gallons per hour at normal r. p. m., and only a pint of oil is required for an hour's operation at normal speed.

Detailed specifications of the Heath Sport

plane are as follows:
Span
Wing area (incl. ailerons)78 square feet
Area of ailerons10 square feet
Stabilizer area4.6 square feet
Elevators area5.5 square feet
Rudder area2.8 square feet
Angle of incidence degrees
Chord at root
Chord at tip 2 feet 4½ inches
Length overall
Height overall 5 feet 5 inches
Weight empty
Gas capacity
Oil capacity 1 gallon
High speed
Landing speed
Engine Bristol Cherub
H. P



Aero Digest Trophy.

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THE ADVANCE AIRCRAFT COMPANY TROY, OHIO

# WESTERN NEWS



The Wright-Whirlwind Fokker "Universal" makes its appearance on the West Coast.

#### CLOVER FIELD MEET

THE "Round-the-Southland" dash was the feature of the annual air meet held at Clover Field, Santa Monica, Calif., in commemoration of the termination of the Round the World Flight. The official pathfinder over the 100 mile course was the new Universal Fokker piloted by Edward Hubbard, president of the Northwest Air Service, Inc., of Seattle, Wash, West Coast Fokker representatives. His official passengers were: Lieut. J. A. McCalet, Los Angeles Police Force; Glenna Jean Hill, winner of the Air Queen contest, Santa Ana; William K. Gibbs, Sunday Examiner; and F. E. Samuels, Western representative of

The Fokker took off ten seconds before the first plane and made the circuit stopping at Long Beach, Santa Ana, Arlington (which adjoins Riverside), Alhambra and return to Santa Monica. Each entry carried a pilot and an observer. Stops were required to be made at each port of call for credentials.

In the Douglas observation plane race around the course Paul S. Woodruff, Crissy Field, made the fastest time—69 minutes. He therefore received a replica of the \$10,000 Santa Monica American Legion trophy on which his name was engraved. Lieut. C. Y. Haynes came in second, making the course in 70 minutes 17 seconds. Third was Lieut. Ned Schramm—74 minutes 7 seconds; fourth, Lieut. W. J. Wallace—77 minutes; fifth, Lieut. L. B. Gregg—80 minutes 29 seconds.

In the military ship race, Lieut. H. E. Shea came in first in 95 minutes 5 seconds; Lieut. C. L. Hussey, second—101 minutes 43 seconds; third, Lieut. Morris Murphy—103 minutes 16 seconds; fourth, Lieut. Ray Harding—108 minutes 58 seconds; fifth, Lieut. Earl W. Clark—124 minutes 59 seconds; sixth, Lieut. R. E. Kennedy—131 minutes 6 seconds.

In the civilian race for 110 to 185 horse power planes, Leo Nomis in Victor Fleming's C.F. 15 biplane won first place with a time of 99 minutes; L. M. Bach in Reginald Bulmer's ship, second—106 min. 45 sec.

In the civilian race for planes of 110 h.p. and under Paul E. Richter in the Alexander Eaglerock came in first—100 minutes 29 seconds; second, Frank Clark in a Fisk Sport—105 minutes 21 seconds; third, K. W. Montee in his "On-to-New-York" plane—110 minutes 2 seconds; fourth, Art Goehel in a Waco 9—118 minutes 27 seconds; fifth, Eddie Blomde in a Roamair—119 minutes; sixth, Harris H. Roake—122 minutes

The tremendous crowd at Clover Field testified to the success of the meet which was sponsored by the Southern California N. A. A. chapter. After the race a banquet was held, after which the prizes were awarded.

### LOS ANGELES COUNCIL SPEEDS AIR TERMINAL

B Y unanimous action of the City Council of Los Angeles, a special committee will make inquiry into the advisability of establishing a municipal airport at Los Angeles, and report back their findings at the earliest possible date.

### CALIF. DEVELOPMENT ASS'N AIR PROGRESS

THE California Development Association, State Chamber of Commerce, is publishing a special aeronautical edition of the California Journal of Development which will contain many interesting articles on air activities throughout the State and complete information of all landing fields.

Definite progress in the forming of re-

gional committees has been made by the Aeronautical Department of this Association, of which R. E. Fisher is chairman; W. M. Garland, vice-chairman, and Frank McKee, director. Organization work has been carried on in all five regions and a foundation has been laid in most of the regions for the formation of complete committees.

The following meetings will be held:

San Joaquin Valley Aeronantical Committee-Fresno, October 1.

Sacramento Valley Aeronautical Committec-Sacramento, October 8.

Southern California Aeronautical Committee—Long Beach, October 15.

North Coast Aeronautical Committee— Santa Rosa, October 22.

Central Coast Aeronantical Committee— Oakland, October 29.

The committees formed during August

San Joaquin Valley Aeronautical Committee: E. G. Hughson, Fresno, chairman; Otto Sandman, Stockton; Don L. Cardiff, Bakersfield; and C. R. Thompson, Merced.

Sacramento Valley Aeronautical Committee: E. G. Funke, Sacramento; O. W. H. Pratt, Woodland; and Charles E. Wilkins, Sacramento.

Central Coast Aeronautical Committee: F. T. Letchfield, San Francisco, chairman; Colonel D. C. Seagrave, San Francisco; D. A. Raybould, San Mateo; Lieut. H. A. Moore, Crissy Field, San Francisco; Prof. W. A. Durand, Stanford; Milo Kent, San Francisco; and C. L. Willetts, Atascadero.

### THE DENVER AIR MEET RESULTS CORRECTED

 $\mathbf{I}^N$  the report of the Denver Air Meet results sent to Aero Digest by a member of the air race committee, and published in the September issue, the following errors appeared:

First and second places in the "On-to-Denver" race were won hy Alexander Eaglerocks and not contested as reported. First and third places in the speed race under 100 h.p. and second place in altitude race over 100 h.p. were also won by Alexander Eaglerocks, winning with 120 h.p. motor over ships with 180-260 h.p. motors.



Rolando and the Eaglerock plane which won many events at the Denver Meet.

#### LOS ANGELES-SEATTLE AIR MAIL OPENS

THE Pacific Air Transport Company opened their Los Angeles-Seattle air mail service, Contract Air Mail Route No. 8, on September 15. Ryan Airport, at 3717 Angeles Mesa Drive, is the Los Angeles terminal; Sand Point Airport, the Seattle terminal.

The distance is 1099 miles, the longest contract air mail route. The route is lighted for night flying from Los Angeles to San Francisco and from Portland to Seattle.

Fourteen hours is the scheduled time to fly the mail from Los Angeles to Seattle. This is forty-one hours less than required for rail transmission. The schedule follows:

transinio oromi	Tite benedate fone	
Southbound Leave		Northbound Arrive
3:45 a.m.	Seattle, Wash.	2:00 p.m.
5:45 a.m.	Portland, Ore.	12:00 noon
8:15 a.m.	Medford, Ore.	9:30 a.m.
12:00 noon	San Francisco, Calif.	5:30 a.m.
2:00 p.m.	Fresno, Calif.	3:30 a.m.
3:30 p.m.	Bakersfield, Calif.	1:45 a.m.
5:00 p.m.	Los Angeles, Calif.	12:01 a.m.
T1		

The postage rate is 15 cents an ounce or fraction thereof for delivery from Los Angeles to Seattle and vice versa; 10 cents an ounce or fraction thereof for delivery to any other point on the route.

#### EAGLE AIRPORT

EAGLE AIRPORT, South Western Avenue at 92d St., Los Angeles, specializes in commercial flying and instruction. They have twenty-five students enrolled.

The field is the headquarters of the White Phantom squadron of stunt and exhibition flyers who do most of the stunt work for



Eagle Airport, Los Angeles, the official test field for F. A. I. licenses.

the Associated Press. Their flying equipment consists of a Burgess N-9, a Canadian Curtiss, four TM scouts, a Fokker, ten JN4Ds and a combination JN fuselage with Boeing wings.

E. Longbrake, president, and H. A. Spier, manager, both expert pilots, are the owners. B. R. Cheny is the chief mechanic, and Ed Bainter, Leo Root and A. Kelsey are the instructor pilots.

#### BURDETT AIR LINES

BURDETT D. FULLER, founder of the old Burdett Airport which is now the Aero Corporation of California, has again taken up his interests in the air. He has come back at the head of the newly formed Burdett Air Lines, Inc. This new corporation was formed for the purpose of opening passenger and freight air lines between Los Angeles, San Francisco, Portland and Seattle; and, if successful, a direct line to Chicago is planned. The new Super Swallow will be used in the passenger service. Six ships of this type are to be put in use as soon as delivery can be made from the factory. The directors of the corporation are Chris Hurtt, Bob Galloway, Nick Galloway and Burdett Fuller.

While the main purpose of the Burdett Air Lines is to establish and operate passenger and freight lines, they are also distributors for Swallow airplanes and have a thriving flying school. Burdett will develop in his own school all pilots to be used on the passenger and freight lines, and will also run an employment bureau for pilots who have had sufficient time and experience to warrant their use as commercial pilots.

All pilots have a standing invitation to look over the Burdett Air Lines and get acquainted.



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#### DISCONNECT the RUDDER

By EARLE OVINGTON

I F you will give me one good reason why any of the controls in a dual-control ship should be left in the passenger's cockpit when other than a pilot or student is being carried, I'll acknowledge that I shouldn't have written this article. But you can't! There is no more reason in putting any one of the airplane controls within reach of the lay passenger than there would be in extending the controls of an automobile to the rear seat of the car, or the throttle of the locomotive to the passengers' coach.

I'll acknowledge that the cases are not quite parallel, since we do need the control in the passenger's cockpit at times in an airplane while we never do in the other two cases. But why the manufacturers of airplanes have not provided means for disconnecting the controls from the extra cockpit in an airplane is more than I can understand. And, since my crash, I'm convinced that to leave them as they are at present is nothing short of criminal. I, for one, will hereafter do everything in my power to have our laws so drafted, when we really begin to get airplane laws, so that such a state of affairs is in violation of the law

I crashed thusly: one hundred and fifty feet up, making about a forty-five degree bank and left turn into the field preparatory to landing. Ship fitted with dual control but with stick out. Rudder-bar on floor, as usual. Two passengers in forward cockpit, man on left and woman on right. Four feet, belonging to said passengers, on floor, accurately placed in the limited space so as to dodge, by only a few inches, the rudder-bar and wires from same to the rudder-bar in my (the pilot's) cockpit.

Gave the ship limited left rudder and plenty of ailerons to left turn. Any pilot knows, of course, to go slow on rudder on a turn, particularly a left turn near the ground, and do as much as possible with the natural banking brought about by the use of the ailerons, as there is hardly a quicker way to get into a spin than too much rudder on a steep bank.

As soon as ship started to turn, tried to take off left rudder but found it jammed more to left. Result, naturally, left tail Immediately put stick forward and ailerons to right and, after one complete turn of spin, got rudder hard over by brute force. Realizing that time was short, gave her full gun to get draft on controls. I might say, in passing, it took some courage to put that stick forward and give her the gun when the earth was coming up at me at a dizzy pace, but I realized that if, we hit in a straight tail spin our wings would be sprouting from our shoulders in a short time. Whether polishing my harp would be added to my duties, or trying to put my trousers on over my tail would be added to my difficulties. I did not take the time to

We hit almost flat, as the pictures of the crash show, and the extent and nature of the casualties indicate. In other words, the ship answered her flippers when I pulled the took toward me, and the nose came up. Doctor says we will all come through one hun-



T. C. Ryan and B. F. Mahoney with their Grand Sweepstakes Trophy won at the Denver Mile High Air Meet.

dred percent. But it might easily have been otherwise.

No, brother pilots, it did not "get" my nerve. Only this is the first time I've ever drawn blood, or broken a bone, in fifteen years of flying and I'm naturally sorry to lose that record. Had some minor crashes, of course, but never a "washout" before, or anywhere near it. And I still think the airplane is far safer than the automobile and propose to do all my traveling in future as in the past, so far as possible, by air.

So much for the crash. Now let's see what we can learn from it, as every pilot who has aviation at heart, and most of them have, is anxious to profit, and have his brother pilots profit from his smashups.

As stated, it's criminal to have the rudderbar connected in the passenger's cockpit when carrying a lay passenger. I've talked with many pilots and they acknowledge that occasionally a passenger steps on the rudder but the pilots with whom I've talked said they cut the motor and told the passenger to take his foot off the control. In other words, they have been high enough so that they had time for this sort of conversation.

Why this state of conditions exists, I don't know. Certainly it would be a comparatively easy matter for designers and builders of airplanes to provide a simple means for disconnecting the passenger's rudder quickly from the pilot's cockpit. For instance, the wires from the passenger's rudder-bar could come to an auxiliary rudder-bar situated directly under the pilot's rudder-bar, and a square hole provided through both of them, so that when a square pin was in place both pilot's rudder-bar and the auxiliary rudder-bar directly under it, connected with the wires to the passenger's cockpit, would move



Frederick (Doc) Whitney, pilot, and F. E. Samuels deliver Aero Digest in a Waco plane in California.

as a unit and the rudder could be controlled from both cockpits. By pulling this square pin the passenger's rudder-bar could be instantly disconnected. Incidentally this would be mighty handy in case a studentpilot jammed the rudder.

While the designers and builders are making a part change, why not do the job up right and provide means in the pilot's cockpit to disconnect all controls in the passenger's cockpit? Many a pilot has been killed by the student "freezing" to the stick. Disconnect the stick and the rudder-bar,—and the throttle and switch, too, if practicable.

Up to the present time, practically all airplane pilots have been men at least above the ordinary, else they would not have taken up such a new means of locomotion. But the airplane is developing so fast now that before long Tom, Dick and Harry will fly Designers and manufacturers must do everything in their power from now on to make the airplane as fool-proof as possible and certainly removing the possibility of the passengers jamming the controls is one of the most important innovations to introduce. It has not been the passengers' fault that they have interfered with the controls. It's directly up to the designer and builder. They should not make an airplane, as they do now, that requires a tedious and comparatively lengthy operation to disconnect the controls in the passenger's cockpit.

Airplane designers and manufacturers, what's your reaction to this accusation? Am I right or am I wrong? Let's hear your side of it.

### HUNTING FOR DOVES WITH AIRPLANES

E ARL S. DAUGHERTY, soloing in his Laird, flew to San Diego, where he met Lieut. D. W. Thomlinson of the U.S. Navy, and Lieut. Buck Lee, also of the U. S. Navy, in Lieut. Thomlinson's OX6 JN. The three flew 46 miles from North Island into the mountains where they decided to hunt for doves. Seeing what they considered a fairly good landing field, deep in a canyon, the two planes made successful landings. In just one hour and a half the three flyers had each shot the limit of doves and started home just before dark. As Earl said "the darker it grew under us the deeper were the canyons," but all landed safely at North Island, San Diego late in the evening It is the intention of the trio to go into the same canyon upon the opening of the deer season, and camp there for hunting.

### THE SEPTEMBER AERO DIGEST AIR DELIVERY

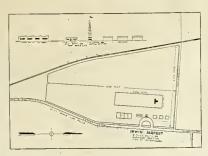
THROUGH the courtesy of Frederick (Dock) Whitney, the September issue of Aero Digest was made on the air fields of Southern California by the new Waco plane which made the thirteen landings of the trip in record time. The Western representative of Aero Digest has been greatly assisted by Mr. Whitney. California representative of the Waco, and also the Aero Corporation of California in their co-operation with the aerial deliveries of this magazine for the past two months.

### AVIATION INSURANCE ON THE WEST COAST

THOMAS HULL PRENDERGAST. representative of the Independence Insurance Company of Philadelphia, which is taking up aviation insurance as one of the main branches of its work, is making a canvas of all of the flying fields and manufacturing plants on the West Coast, verifying the letters the company has sent out in reply to inquiries from owners of planes and makers of all kinds of aircraft. Every one in this territory seems to be much interested and Mr. Prendergast, who gives a very comprehensive explanation of the risks and premiums, is well pleased with the outlook. A number of policies were written up in less than a week.

#### IRWIN AIRPORT

RWIN AIRPORT has been opened up for the free use of the flying public at Sacramento, Calif. Located 3 miles south of the State Capitol Building and business section on Victory highway, it comprises 150 acres and has a runway 2000 ft. long by 300 ft. wide leveled in fine condition. It is equipped with hangars, repair shop, service station equipped with gasoline crane allowing plane to take on gas, oil and water in 5 minutes. There is also a tower lighthouse with beacon lights for night flying. Rest rooms, lunch counter, telephone, etc., are provided. Bus to Sacramento stops at the airport. Irwin Aircraft Co., who own





The Irwin Airport near Sacramento, Cal. this airport, invite all pilots to make it their headquarters when in the Sacramento district, where they will be made welcome.

#### ALEXANDER OFFERS PART PAYMENT PLAN

E AGLEROCKS will now be sold through the popular American plan of easy payments.

Through an announcement from J. Don Alexander, president of the Alexander Eaglerock Company, their 10-payment plan will make it possible for all experienced pilots and students to own their own airplanes. New factory buildings are being planned to take care of the rush of business that this new plan will stimulate.

Mr. Alexander was elected N. A. A. Governor for Colorado at the recent Convention held in Philadelphia.

### TWO FLORIDA AIRMEN FLY TO LOS ANGELES

H. E. CORNELL, proprietor of an airport at Winter Haven, Fla., accompanied by George M. Haldeman, who is also an owner of an airport at Lakeland, Fla., are making a tour of the United States in Mr. Cornell's WACO OXX 6. Traveling by the southern route, they arrived at Los Angeles on Sept. 10th, landing at the Eagle Airport, on Western Ave. They remained for a few days in Los Angeles, visiting the flying fields then leaving for the North visiting San Francisco, Portland and Seattle. Leaving Seattle they will take the northern route to New York City, taking in principal points of interest along the well-traversed transcontinental airway.

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AERO DIGEST will award a prize of \$5 each month for the best joke published. Only jokes pertaining to the aircraft field will be considered. Address the "Picked From The Air" Department, Aero Digest, 220 West 42nd Street, New York, N. Y.

Miss F. Y. Geddes, Fresno, California, won the prize for October with the following:

#### Page the "Mucilage!"

A group of small pilots of the future stood looking at a sleepy old ship of the genus "Jennie."

"Pretty good fuselage," commented a bystander.

"Fuselage-what's that?" queried Billy Jones, nudging Tom Maxwell.

"It's a lot of guns going off at once," explained

" Taint neither," cut in Pete Farman with finality, "that's 'fusillade.' THIS is a kind of glue!"

Carpenter: "Where's my plane?"

Plumber: "I didn't know you were an aviator."

"I understand Polly came out first in the loving race." "Yes, she was neck and neck all the way but finally won by a lap."

"Who did the first 'falling leaf'?"

"I guess Eve must have done it in the Garden of Eden."

Felix: "Aviators will always be poor debaters."

Alex: "Why's that?"

Felix: "Because they're never sure of their ground."

Alex: "And they'll always be poor neckers."

Felix: "Go on."

Alex: "Because you never can tell where they'll land next."

"Did you have a hangover after your aeroplane trip?"

"Quite on the contrary, I did my hanging over during the ride."

-New York University Medley.

The way part of the preamble to the Aviator's Constitution should read:

"-Life, Liberties and Pursuit Planes for Snappiness."

-Kenneth D. Stern.

#### Another on Scotland

An aviator was flying in Europe when he got in a fog. He had flown for some time when he finally got out of it. He saw land under him and not knowing where he was, decided to land and find out. After landing he inquired of a native what country he was in.

"I'll tell you for three pence," said the native. He flew on; he knew he was in Scotland.

-R. Stanton Morris, Jr.

Jack Tar while on shore duty at the Naval Air Station, after a few years' stiff fight against the elements over the seven seas, takes his first hop with Lieut. Skarum Stiff. The pilot gives her the gun, down the field and up in the air they went.

Jack Tar: "Why, Mr. Stiff, this is what I call smooth

sailing. My, but what a difference!"

Skarum Stiff: "Is that so? Well, you haven't seen the half of it yet. This we call the Immelman turn, and this a nose spin, and this is a side slip, and this a three point landing.

Jack Tar: "I might have known it."

Skarum Stiff: "Why, wasn't it smooth sailing?"

Jack Tar: "Almost sir, but if I must get seasick, I want to go back to sea."

-Fulger Mattus.

Pat: "Faith 'n I'd hate to be up in that thing." Mike: "Begorra, I'd hate to be up there and not in it."

-- LaVere McCrillis.

A negro experiencing the thrill of a loop for the first time. He had forgotten to fasten the belt, so in the middle of the loop he started falling to his doom.

"Oh, Lord, save me!" was his soulful prayer, when suddenly he was jerked to a violent stop.

"Never mind Lord, I'se caught in a tree," he finished.

-Paul C. Frost.

The Bird who used to tell about the fish he caught, now tells what his old Jenny will do with "no hand to guide her."

Sweet young thing to pilot, the wings of whose ship have just fallen off fifteen thousand feet up.

"Oh, George, won't we have the most smashing story to tell the folks when we DO get home?"

-Harold Wade.



# The business of flying

MORE than one-third of the world's flying is now done in the United States. Since the War 30,000,000 miles have been covered by commercial and postal carriers alone. This is flying "for business only," and hazardous work it is.

No guess work here! A single slip might be fatal. Every bit of equipment must be the finest possible. None but the best will do. This is why Rand McNally maps are chosen. Flyers everywhere make constant use of them, the same State Pocket Maps that are sold from coast to coast for 35c.

Flyers prefer them because of their unusually complete and detailed information, thoroughly accurate and trustworthy. They check with the terrain perfectly, and constant revision keeps them up to date.

No map is ever permitted to bear the imprint of Rand M?Nally & Company unless it is as perfect a map as can be made for its intended use. This is the assurance given aviators and all others who use maps in their daily work.

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# TRAVEL AIR ACTIVITIES

THE passing of the Jenny through old age, over work and lack of adaptability to fit into the general scheme of commercial aviation has been hastened by the advent of new airplanes designed and built especially to meet the requirements of commercial flyers who have a great desire to make the "pay" in payload stand for something tangible. Running parallel with the demand for new and better planes was a great national interest in commer-

cial aircraft service. Business men began to see the advantage of rapid and safe transportation not only for valuable freight and merchandise, but for themselves, in order to meet important business engagements. Also a greater interest was being shown by men who wanted airplanes for their own private use.

With this general condition prevailing, the Travel Air Company was formed on Jan-

uary 1, 1925, at Wichita, Kansas, to build a new type out of new material, designed to stand the rough treatment which is dealt out to all commercial aircraft and with a performance that would make commercial flying profitable.

The first Travel Air standard model was flown March 13, 1925. It was powered with an OX5 engine. Official tests were carried out before the local representatives of the N. A. A. and a load of 1,119 pounds was carried successfully. This is considered to be the largest load car-

ried by an OX5 motored plane. With these most important factors present, a minimum power plant carrying a maximum load with safety, the first standard Travel Air model was headed for success right from the start.

Since that auspicious beginning, five different types of Travel Air planes have been designed and built, every one of which has been in operation and given perfect service up to the present time. The total production today is now

155 planes which is an excellent record for a new company not two years old pioneering in a field that is known to be full of difficult problems of engineering and merchandising of the finished product.

Three of the privately operated air mail lines are using Travel Airs in various parts of the country. It is a well known fact that the men behind most of these contract lines have had a great deal of

experience in many types of aircraft and are fully cognizant of the importance of using nothing but the right equipment,

The officers of the Travel Air Company are men who have been gaining experience in aviation since 1910. Clyde V. Cessna, president, built his own plane in that year and flew it himself over the salt plains of Oklahoma. Walter H. Beech, vice-president and general manager, is known throughout the country as one of the leading commercial airplane pilots. It was he (Continued on page 314)



The first Travel Air carried a test load of 1,119 pounds.



The Travel Air factory at Wichita, Kansas, and views showing some of the processes of manufacture of Travel Air planes.

In addition to winning a large number of contests throughout the country

# TRAVEL AIR PLANES

finished 1st in the two principal reliability tests of the year.

No. 1—The Commercial Airplane Reliability Tour won by the Travel Air-Pioneer plane powered with a Wright Whirlwind engine piloted by Walter Beech, Travel Air Manufacturing Co. and Brice Goldsborough of the Pioneer Instrument Co.

No. 2—"On To the Sesqui" race won by Fred Hoyt who flew from San Diego to Philadelphia in an OX5-powered Travel Air over some of the most difficult flying country in the U. S.

Both of these events were extremely severe tests of speed and carrying ability, strength and ruggedness, which are essential characteristics of reliable commercial airplanes.





## TRAVEL AIR USES CURTISS-REED PROPELLERS

WALTER BEECH, Vice-president of the Travel Air Mfg. Co., of Wichita, Kansas, says: "The reason we are using the Curtiss-Reed propeller on the Travel Air plane is that we feel it is without doubt the most satisfactory propeller for all-around use, and is not affected by climatic conditions. We feel that this propeller is in keeping with the high standard of quality built into Travel Air planes."

# **CURTISS-REED METAL PROPELLERS**

were used on commercial and military airplanes of various types that won the following events at the recent National Air Races in Philadelphia:

"B. B. T." Trophy

"On to the Sesqui"

National Guard Trophy

Scientific American Trophy

Benjamin Franklin Trophy

Independence Hall Trophy

John L. Mitchell Trophy

Liberty Engine Builders' Trophy

Aero Club of Pennsylvania Trophy (1)

Aero Club of Pennsylvania Trophy (2)

THE CURTISS AEROPLANE
OFFICES:
CLINTON ROAD
GARDEN CITY, N. Y.



AND MOTOR CO., INC.
FACTORIES:
BUFFALO, N. Y.
GARDEN CITY, N. Y.



1114 N. FRONT STREET, NILES, MICHIGAN



# Finished with Berryloid/

In winning the Ford Reliability Tour, Walter Beech's Travel Air established a performance record that reflects credit upon the entire aircraft industry. Travel Air planes are finished with

Berryloid—the permanent high-luster lacquer that resists the effects of gasoline, oil, salt water and the elements. Metal parts are treated with Lion oil the greatest known rust preventive.

For complete information about these and other of Berry Brothers' Aircraft Finishes address Aviation Department

Detroit, Mich.

# HASKELITE

The Waterproof Plywood

#### Thirty Uses in Aircraft Construction

The answers to a recent questionnaire show thirty uses to which HASKELITE is being put in aircraft construction. The following list shows these uses and the number of builders reporting each.

- 24 Fuselages
- 19 Leading Edges
- 10 Engine Bearers
- 31 Flooring
- Tail Linings
- Center Ribs
- Tank Cover
- Center Cover
- Pontoon Parts
- Propeller Spinner
- Wing Covering in Slip Stream
- 23 Bulkheads or Partitions
- 8 Pontoon Covering
- 10 Aileron or Elevator Surface
- 32 Instrument Boards
- 14 Walkway Ribs

- 30 Wing Ribs
- 22 Box Beams
- 25 Seats
- 6 Rudder
- 22 Step Boards
- 12 Drag Ribs
- 13 End and Tail Ribs 28 Walkway
- 6 Headpads 8 After Deck Bulk-
- heads 3 Webs and Wing Spars
- 1 Bracing instead
- Wire Plates 3 Gussett
- Fuselages Gear 1 On
- landing G Struts Struts.

#### Bought by Practically All Builders

Practically every contractor and commercial aircraft builder in the country is using HASKELITE today, as well as all branches of the U.S. Government using airplanes. Note the following:

Advance Aircraft Co. Boeing Airplane Co. Consolidated Aircraft

Douglas Company Huff Daland Airplanes,

Inc. Curtiss Aeroplane & Mo-

tor Co. G. Elias & Bro., Inc. U. S. Postal Service

Ryan Airlines E. M. Laird Airplane Co. Hamilton Aero Mfg. Co. Waterhouse & Royer

U. S. Army Johnson Airplane & Supply Co.

Lincoln Standard Aircraft Co.

Glenn L. Martin Co. Swallow Airplane Mfg. Co.

Travel Air, Inc. Chance Vought Corp. Buhl-Verville Airce Aircraft Co.

U. S. Navy Stinson Airplane Corp. Aerial Service Corp. Goodyear Tire & Rubber Co.

Woodson Engineering Co. Loening Aero. Engineering Corp.

#### HASKELITE MANUFACTURING CORPORATION

133 W. Washington St., Chicago, Ill.

## SHELBY

Seamless Steel Tubing

Most desirable for aircraft construction

Complete stocks available for immediate shipment from

#### C. A. ROBERTS CO.

Chicago

Detroit

St. Louis

Indianapolis



#### BOYCE MOTOMETER

Used on the TRAVEL AIR



The Travel Air—Pioneer plane piloted by Walter Beech and Brice Goldsborough won the 1926 Commercial Reliability Tour. It is provided with BOYCE MOTO METERS in both front and rear cockpits.

#### The MOTO METER CO., Inc.

Industrial Thermometer Division

LONG ISLAND CITY, N. Y.



#### TRAVEL AIR PLANES

are finished with

# VAN SCHAACK

**NEW PRODUCTION** 

# NITRATE DOPE

Van Schaack Bros. Chemical Works, Inc. 3358 Avondale Avenue CHICAGO, ILL.

# AERO SUPPLY MFG. CO., INC.

ΩF

COLLEGE POINT, L. I., N. Y.

Have Furnished
Travel Air Mfg. Co., Inc.

with

Aircraft Bolts - Nuts - Screws Cable - Turnbuckles - Shackles Tierods - Tubing - Strip Steel Dural Parts - Clevis Pins, etc.

We Solicit an Opportunity to Serve You in Like Manner

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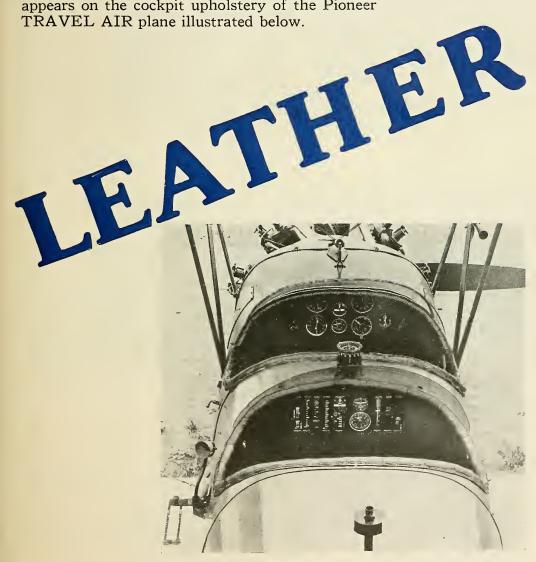


# IN THE TRAVEL AIR

winner of the Commercial Reliability Tour of 1926 and some of the important events at the National Air Races, REAL LEATHER is used generously for the cockpit upholstery. A Travel Nothing takes the place of Air was flown from Eureka, California to Philadelphia, piloted by Fred D. Hoyt who won the "On to the Sesqui" race for the Sesqui-Centennial Trophy and a cash award of \$1200 for his transcontinental flight.

Real leather is soft and smooth to the touch, but its tough surface resists abuse. Placed in the most conspicuous parts of an airplane, the cockpits, it is required to withstand an extraordinary amount of wear and tear. Once installed, leather upholstery never needs replacement for it is a long-lasting NATURAL covering. A wide variety of colors and finishes are available.

THE toughness and durability of REAL LEATHER make it the finest and yet most economical for protection against hard wear and deterioration. The permanently beautiful appearance of a REAL LEATHER finish is another quality responsible for its selection by so many prominent aircraft builders. REAL LEATHER appears on the cockpit upholstery of the Pioneer TRAVEL AIR plane illustrated below.



American Leather Producers, Inc.
One Madison Avenue New York, N. Y.

## TRAVELAIR

uses and recommends

#### PIONEER INSTRUMENTS



The Whirlwind Travel Air which won the Ford Reliability Tour was completely equipped with Pioneer Instruments.

Write for circular and prices.

# PIONEER INSTRUMENT COMPANY 7.54 LEXINGTON AVE. BROOKLYN NEW YORK

# Winning 7 of the first 10 places

IN THE FORD TOUR

The winning "Travel Air" in the 1926 Ford Reliability Tour, as well as the planes taking third, fourth, fifth, sixth, seventh and ninth places—seven out of the first ten—were equipped with Macwhyte Streamline Tie Rods. Ask us how these tie rods give 10% increased flying efficiency. Macwhyte Company, 1200 Racine Ave., Kenosha, Wis.

MACWHYTE

treamline TIE RODS

#### TRAVEL AIR ACTIVITIES

(Concluded from page 306)

who piloted the Travel Air to victory in the 1926 Commercial Reliability Tour held during the latter part of August. The plane was equipped with a Wright Whirlwind engine and fitted up especially for the Pioneer Instrument Company as their "Flying Showcase." The secretary of the company is William Snook and the treasurer, Lloyd Steaman.

Travel Air planes have scored high at this year's air meets. Fred Hoyt in a C-6 Travel Air won the Aero Digest Trophy in the race for high speed commercial planes at Brea, Calif. He also won the OX5 special race with a stock model. At Little Rock, Ark., he won the race for airplanes of 100 h. p. or less. Walter Beech took second with an OX5 Travel Air; in the Free-For-All, he won first with a 14 Travel Air.

Although special models are built to individual requirements, several standard models are in regular production. The model B powered with a Curtiss OX5; models BW and CW with Whirlwind engines; model BH with a 180 h.p. Hispano. A Curtiss C-6 may be installed.

Where the highest performance is desired, the CW and BW models are popular. The CW has a span of 42 feet, weighs 1600 pounds empty, carries a useful load of 1400 pounds at a speed of 120 miles an hour. The BW has a span of 33 feet, weighs 1350 pounds empty, carries a useful load of 900 pounds at a speed of 135 miles an hour. The model B, such as used by Fred Hoyt on his trip from California to the National Air Races in Philadelphia, has a span of 33 feet, weighs 1300 pounds empty, and carries a useful load of 750 pounds.



The wings, body and tail surfaces of THE TRAVEL AIR PLANE

are covered with

## **FLIGHTEX FABRIC**

Reg. U. S. Pat. Off.

#### GRADE A COTTON CLOTH

**GUARANTEED** 

to meet specifications of the

ARMY AND NAVY AIR SERVICES

# E. S. TWINING & CO. 320 BROADWAY, NEW YORK

# TRAVEL AIR PLANES

are in use on three of the contract air mail routes



The Travel Air owned by the Pioncer Instrument Campany which won the 1926 Commercial Airplane Reliability Taur. It is powered with a Wright Whirlwind engine.



Special 3-place Travel Air built around the Wright "E" 180 h.p. matar; equipped with wheel brakes, split axle landing gear. Climbs 1200 feet per minute. High speed 130 m.p.h. Landing speed 40 m.p.h.

Where reliability, ruggedness and plus-performance are required Travel Air planes are in use.

Consult the dealer nearest you.

Boston Airport Corporation Box 126, East Boston, Mass.

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Chesapeake Aircraft Co. Headquarters Armory Howard and Biddle Sts., Baltimore, Md. J. Carroll Cone and W. F. Moody Little Rock, Ark.

Joseph F. Noyes Box 858, Dallas, Texas

Bob Shank Huntington, W. Va. Lyle-Hoyt Aircraft Co. Box 121, Santa Monica, Cal.

> Burns Fliers 2800 W. Grand Blvd. Detroit, Mich.

Companía Mexicana De Aviacion, S.A. Edificio Novedades, Apartado 1032 Tampico, Mexico

TRAVEL AIR MANUFACTURING CO., Wichita, Kansas

# WITH the SERVICES

# CAPT. H. D. CAMPBELL WINS SCHIFF TROPHY

CAPTAIN Harold D. Campbell, Operations Officer of the Second Marine Aviation Group at North Island, San Diego, Calif., has been named the 1926 winner of the Herbert Schiff Memorial Trophy awarded annually to the navy or marine flyer credited with the most flying hours without accident.

Captain Campbell has flown 839 hours and 40 minutes during the last year without an accident of any sort. His total hours in the air are approximately 3,000 hours; 2,500 hours of which are without a crash—an exceptionally good record.

All flying time was spent in the performance of useful military missions and the time given includes two transcontinental flights, numerous other flights over rough country and one forced landing under exceptionally difficult condition. Two thousand, seven hundred and eighty-four take offs and an equal number of landings, many in strange fields, were made in twelve months without accident

Captain Campbell has been instructing in flying almost continually for five years and has never failed to qualify a student and has never lost a single pilot whom he has taught to solo. He recently made a cross-country flight to Denver, Colo., for the National Mile-High Air Meet and took first place in formation flying. At the recent air meet at Lordsburg N. M., he took first place in three out of four events.



Captain H. D. Campbell, U. S. M. C. winner of the Schiff Memorial Trophy.

During the war he served two years and two months in France and Germany with the Second Division, taking part in all major offensives. He was with the first American troops to land on French soil and was wounded at Blanc Mont., Oct. 4, 1918. He entered marine aviation July 1, 1921.

In last year's competition for the Schiff trophy Captain Campbell won second place.

The trophy is named in memory of Lieut. Herbert Schiff, who served with the Naval Air Service during the war and was killed at Hampton Roads, July 11, 1924, while serving in line of duty in the Naval Aviation Reserve



International Newercel

Air chiefs at Bolling Field: Assistant Secretary of War Davison, General Patrick, Major Dargue, Brigadier General Fechet and Captain Eaker. Major Dargue and Captain Eaker have been chosen to fly to South America.

#### MAPPING EXPEDITION TO ALASKA RETURNS

THE Alaskan Aerial Survey Expedition has finished the mapping of Admiralty and Douglas Island, Alaska. Over 15,000 square miles have been mapped thus far and considerable more territory would have been covered had it not been that the expedition encountered unseasonable weather. However, the work accomplished this summer was the equal of two years' work as originally estimated.

In addition to plotting and mapping work, the naval expedition did considerable work for the Forestry, Agriculture and Fish Commissions of Alaska which was of a very valuable nature and which could not have been accomplished in any other manner than by the use of planes.

Lieut. Ben H. Wyatt, one of the Navy's most experienced pilots, was in charge.

# TEN CHOSEN TO FLY TO SOUTH AMERICA

THE following tentative list of pilots to take part in the proposed aerial flight to South America this fall have been announced by the War Department:

Major Herbert A. Dargue, Office, Chief of Air Service, (in charge of flight); Captain Arthur B. McDaniel, Kelly Field; Captain Ira C. Eaker, Office, Chief of Air Service: Captain Clinton F. Woolsey, McCook Field; 1st Lieut, Bernard S. Thompson, Phillips Field; 1st Lieut, Leonard D. Weddington, Fort Sam Houston; 1st Lieut. Charles McK. Robinson, Fort Crockett; 1st Lieut. Muir S. Fairchild, Langley Field; 1st Lieut. Ennis C. Whitehead, Wright Field; and 1st Lieut. John W. Benton, Crissy Field.

#### BARTLETT COMMANDS LONG RANGE SCOUTING

COMMANDER Harold T. Bartlett has been selected to succeed the late Commander John Rodgers, in the field of long range scouting by aircraft. He will command the PN-10 flying boats now under construction at the Philadelphia Naval Aircraft Factory.

When the planes are placed in commission, Commander Bartlett expects to fly them to San Diego, via the Panama Canal, where they will join the Battle Fleet for further long-distance flying.

#### BOMBING SQUADRON FLIES 216,000 MILES

A RECORD of flying 216,000 miles in less than a year, without a single forced landing was established by the Torpedo and Bombing Plane Squadron No. 1, of the Scouting Fleet Aircraft Squadrons. The squadron is composed of 12 planes:

# Investigate This Market

THE value of aircraft produced in the United States last year was more than twelve and a quarter million dollars—nearly equal to the peak of production during wartime, according to a report recently issued by the Daniel Guggenheim Fund for the Promotion of Aviation. Next year a new high production record will be established. This involves the purchase of millions of dollars worth of raw and fabricated materials, parts, accessories, fittings, etc., which must be bought from outside markets.

#### Whose Buying Judgment Directs These Purchases?

Almost everything used in the manufacture and operation of aircraft is governed by the combined judgment and opinion of designers, engineers, pilots and other trained men in every branch of aircraft construction and operation. Sell them and the purchasing agent will place his orders with you.

AERO DIGEST, the leading aeronautical publication, is read by these men who build and operate aircraft. The monthly articles and stories published here keep everyone in the aircraft industry fully informed on the subjects of aeronautical progress which are of greatest interest to them.

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## ARMY AND NAVY AIR SERVICE ORDERS

#### ARMY AIR CORPS ORDERS

T HE following Army Air Corps orders have been issued as of the dates indicated in brackets: Alkire, Darr Hayes, Flying Cadet, Luke Field, Hawaii, commissioned second lieutenant.

Allison, Dixon McCarty, Flying Cadet, Mitche Field, N. Y., commissioned as second lieutenant Andrew, Jas. Wm., Urbana, Ill., commissioned second lieutenant, (Sept. 8) to Brooks Field. (Sept. 11)

Ayer, 2d Lt. Genneth Keith, East Lynn, Mass., to Brooks Field, Tex., for training. (Sept. 4) Baker, 2d Lt. William E., relieved from duty at Kelly Field, Tex. Report to Fort Crockett, Tex.

Barnes, 2d Lt. Sarl W., relieved from duty at Kelly Field, Tex. Report to Fort Crockett, Tex. Bassett, Chas. Arthur, Flying Cadet, 17th Pursuit

Squadron, Selfridge Field, Mich., commissioned second lieutenant.

Baxter, 2d Lt. Henry R., from Mitchel Field, N. Y., to Brooks Field, Tex. (Sept. 20)
Baxter, Thurston H., Jerseyville, Ill., commissioned second lieutenant. (Sept. 8)
Benson, 1st Lt. Joseph W., leave of absence, one month and seven days.

Bettrandias, 1st Lt. Victor E., leave of absence, 1 month. (Sept. 8)

(Sept. 10) month.
Bevans, 2d Lt. James M., relieved from duty a Kelly Field, Tex. Report to Fort Riley, Kans

Bock, Maj, Paul T., designated assistant commandant Air Corps Technical School, Chanute Field, Rantoul, Ill., vice Capt. Clarles B. B. Bubb, hereby relieved. (Sept. 10) Boyarsky, Capt. Josepb Charles, from Charlotte, N. C., to Middletown, Pa. (Sept. 10) Boyd, Kenneth Watson, Flying Cadet, Brooks Field, Tex., commissioned second lieutenant. (Sept. 18)

Boyd, 1st Lt. William L., leave of absence, 4 months; previous leave revoked. (Sept. 13) Bradley, 2d Lt. Clifford P., relieved from duty at Kelly Field, Tex. Report to Selfridge Field, Micb. Sept. 7) Brant, Maj. Gerald C., from General Staff Corps and other duties, as executive officer to Assistant Secretary of War. Bridget, Bernard Alexander, Flying Cadet, Langley Field, Va., commissioned second lieutenant. (Sept. 8)

Brown, 1st Lt. Raymond R., from Bowman Field, Ky., to Hawaiian Dept. Bryte, 2d Lt. Walter G., Jr., relieved from duty at Kelly Field, Tex. Report to Crissy Field, Calif. Burges, 1st Lt. Walter D., from Kelly Field, Tex., to Scott Field, Ill. Burgess, 1st Lt. Walter K., from Kelly Field, Tex., to Clover Field, Santa Monica, Calif., upon expiration of leave of absence at Palouse, Wash. (Sept. 4)

Caldwell, 2d Lt. Charles H., relieved from duty at Kelly Field, Tex. Report to Mitchell Field, N. Y. Kelly Field, Tex. Report to Mitchell Field, N. Y.

Carlson, Oscar Frederick, Seattle, Wash., commissioned second lieutenant.

Clark Francis Edgar, Champain, Ill., commissioned second lieutenant.

Clark, 2d Lt. Ray H., from Fort Sam Houston, Tex., to San Diego, Calif.

Collins, James Henry, Flying Cadet, Chamtue Feild, Ill., commissioned second lieutenant.

(Sept. 8)

Colok, 2d Lt. Orval R., leave of absence extended for days.

Cote, Narcisse Lionel, Maxwell Field, Montgomery, Ala., commissioned second lieutenant.

(Sept. 8)

Coyle 1st Lt. Benedich A., relieved from duty at

Coyle 1st Lt. Benedich A., relieved from duly a Kelly Field, Tex. Report to Kelly Field, Tex.

Kelly Field, Tex. Report to Kelly Field, Tex.
(Sept. 7)
Cresscy, 1st Lt. George G., leave of absence, 1
month, 37 days.
(Sept. 22)
Cryne, Maj. Earl Adna, Specialist Reserve, from
Camden, N. J., to McCook Field, Dayton, O.,
for training.
(Sept. 4)

Camden, N. J., to McCook Field, Dayton, O., for training.
Davasher, 2d Lt. Glenn L., leave of absence, 2 months, 23 days. (Sept. 47) Davies, Clinton William, Chanute Field, Ill., commissioned second lieutenant. (Sept. 8) Davies, Ward Jackson, Hollidaysburg, Pa., commissioned second lieutenant. (Sept. 8) Dawson, Wallace Stribling, Flying Cadet, Langley Field, Va., commissioned second lieutenant. (Sept. 8)

Deerwester, Chas. Herman, Flying Cadet, Selfridge Field, Mich., commissioned second lieutenant. (Sept. 8)

Denniston, 2d Lt. Joseph C. A., relieved from duty at Kelly Field, Tex. Report to Maxwel duty at Kelly Field, Tex. Report to Maxwell Field, Ala. (Sept. 1) Diamond, 1st Lt. Aubrey Fred, from Pittsburgh, Pa., to Middletown, Pa. (Sept. 10) Dickinson, Capt. Raymond Starbuck, from Los Angeles to Coronado, Calif., for training.

School, Capt. James F., from Advanced Flying School, Kelly Field, Tex., to Langley Field, Hampton, Va. Jonnelly, Capt. William F., from Kokomo, Ind., to Chanute Field, Ill. (Sept. 22) Deslittle, 1st Lt. James H., leave of absence extended 3 days. (Sept. 18) Drake, 1st Lt. Alonzo M., from duty in office of

Chief of Air Corps, Washington, D. C., to McCook Field, Dayton, O. (Sept. 24)
Dyer, Harvey Flynn, Lawrence, Kans., commissioned second leutenant.
Dulligan, 2d Lt. John H., relieved from duty at
Kelly Field, Tex. Report to Aberdeen, Md.
(Sept. 7)
Eppright, Geo. J., Manor Travis County, Tex.,

Eppright, Geo. J., Manor Travis County, Tex., commissioned second lieutenant. (Sept. 8) Ervin, Capt. Robert G., from Omaha, Nebr., to duty in office of Assistant Secretary of War.

Esposito, 2d Lt. Vincent J., from Brooks Field,
Tex., to Fort Sam Houston, Tex.
Fernsten, 1st Lt. Edward L., leave of absence,
two months.
Fickel, Maj. Jacob E., relieved from duty in office
of Chief of Air Corps; assigned to Dayton, O.
(Sept. 14)

of Chief of All Colps.

Finley, 1st Lt. Robert H., from foreign service, to (Sept. 14)

Foster, 1st Lt. Angier H., relieved from duty at

Kelly Field, Tex. Report to Fort Crockett, Tex.

(Sept. 7)

Foster, 1st Lt. Thad V., leave of absence, 1 month

(Sept. 23)

Foster, 1st Lt. Thad V., leave of absence, 1 month.

Frank, Maj. Walter H., detailed assistant commandant Air Corps Tactical School, Langley Field, Vs.

Gamble, Herbert Will, Los Angeles, Calif., commissioned second lieutenant.

Gept. 8)

Gates. Capt. Warner B., from Advanced Flying School, Kelly Field, Tex., to Marshall Field, Fort Riley, Kans.

Gelber, Kans.

Gilkey, Signa Allen, St. Louis, Mo., commissioned second lieutenant.

Gilkey, Signa Allen, St. Louis, Mo., commissioned second lieutenant.

Gept. 8)

Gilkey, Richard Hays, Caldwell, Tex., commissioned second lieutenant.

Goodrich, 1st Lt. Donald R., from Detroit, Mich., to Philippines.

Griffin, Capt. Leo. James, from Atlantic, Mass., to Langley Field, Va.

Greene, 1st Lt. Carl F., leave of absence, one month.

Guillett, John Felix, Flying Cadet, Kelly Field, Tex., commissioned second lieutenant. (Sept. 22)

Greene, 1st Lt. Carl F., leave of absence, one month.

Guillett, John Felix, Flying Cadet, Kelly Field, Tex., commissioned second lieutenant. (Sept. 28)

Harvey, Alva Lee, Technical Sergeant, 11 sch.
Philippines.
Harper, 2d Lt. Rohert W., relieved from duty at
Kelly Field, Tex. Report to Fort Crockett, Tex.

Kelly Field, Tex. Report to Fort Crockett, Tex.

Harveyl, Alva Lee, Technical Sergeant, 11 Sch.
Group, Brooks Field, Tex., commissioned second
lieutenant. (Sept. 8)
Henry, Geo, Edley, Spokane, Wash., commissioned
second lieutenant. (Sept. 8)
Holcomb, 2d Lt. Leslie P., ordered to Scott Field
immediately. (Sept. 4)
Holland, 1st Lt. Harvey, H., leave of absence. 18

immediately. (Se Holland, 1st Lt. Harvey H., leave of absen

days.

Holms, Ralph Emerson, Oakland, Calif, commissioned second lieutenant.

Holms, Thomas Jackson, Washington, D. C.,
From Lindwood Second lieutenant.

Hotton, 1st Lt. Clarence F., leave of alsence, 3 (Sept. 29)

Hudson, Lindwood Pendleton, Staff Sgt., Brooks

Field., Tex., commissioned second lieutenant.

(Sept. 29)

(Sept. 29)

(Sept. 29)

(Sept. 20)

Field., Tex., commissioned second lieutenant. (Sept. 8)

Hughes, Henry Lee, Private First Class, 30 Infantry, Presidio of San Francisco, Calif., commissioned second lieutenant.
Irvine, Clarence Shortridge, Detroit, Mich., commissioned second lieutenant.
Jaccard, Paul Angust, Seattle, Wash., commissioned second lieutenant.
Jamieson, Leland Shattusk, Flying Cadet, Kelly
Field, Tex., commissioned second lieutenant.
(Sept. 8)

Johnson, Capt. Edward Albert, Specialist Reserve, from Dayton, O., to McCook Field, O., for training.
Johnston, Gerlad Geoffrey, Charlotte, N. C., commissioned second lieutenant.
Kenny, 1st Lt. Frederick P., leave of absence extended 10 days.
Kenyon, 1st Lt. Horace, Jr., from Organized Reserves of Ninth Corps Area, and additional duty as survey officer at the Douglas Company, Clover Field, Santa Monica, Calif., to Hawaiian Department.

(Aug. 31)

Field, Santa Momca, Calit., to Hawaiian Department.

Kerr, Capt. Charles Phillips, from West Newton, Mass., to McCook Field, Dayton, O. (Sept. 4)

Kessler, 2d Lt. Alfred A., Jr., leave of absence extended 15 days.

Kidwell, 2d Lt. John P., relieved from duty at Scott Field, Ill., and assigned to Air Corps Balloon and Airship School, Fort Scott.

(Sept. 4)

Kinney. 2d Lt. Dorsey Eugene, from Belle Fourche, S. D., to Chanute Field, Ill., for train. (Sept. 14) ing.

Kirtland, Lt. Col. Roy C., leave of absence, one (Sept. 18)

Mirtuand, Lt. Col. Roy C., leave of absence, of month.

(Sept. 18
Klein, Frank Dunne, Roslindale, Mass.. of Sept. 18
Knight, 2d Lt. Elmer Florance, orders for dut to Brooks Field, Tex., amended to read "to pursue course of instruction for reserve officers."

Koenig, 1st Lt. Theodore J., leave of absence days. penig, 1st Lt. Theodore J., leave of absence, a., days. untz, 1st Lt. Clyde A., relieved from duty at Kelly Field, Tex.; to Kelly Field, Tex. (Sept.7)

Kyle, Reuber, Jr., Columbus, Ga., commissioned second lieutenant.
Larned, Maj. John Hawley, from Philadelphia, Pa., to Wasbington, D. C. (Sept. 18)
Lawton, It Lt. Malcolm C., from office of Air Corps, Washington, D. C., to Fairfield,

Corps, Washington, D. C., to Fairfield, O.

(Sept. 24)

Lea, 1st Lt. Royal B., leave of absence, 3 months.

Lehinan, Arthur Joseph, Crawfordville, Ind., commissioned second lieutenant.

Lichtenberger, Herbert Charles, Omaha, Nebr., commissioned second lieutenant.

Lindsay, Gregg Miller, Louisville, Ky., commissioned second lieutenant.

Lindsay, Gregg Miller, Louisville, Ky., commissioned second lieutenant.

Lindsay, Gregg Miller, Louisville, Ky., commissioned second lieutenant.

Louisville, Ly., commissioned second lieutenant.

Louisville, Ly., Capt. 14, Paul Morris, from Dayton, O., to Washington, D. C., for training.

Luckey, Mason Harley, Portland, Ind., commissioned second lieutenant.

Luckey, Capt. George Paul, Specialist Reserve, from Dayton, O., to Washington, D. C.

Lynch, 2d Lt. Edmund C., from Science (Sept. 4)

Lynch, 2d Lt. Edmund C., from Scott Field, III., to Brooks Field, Tex.

McCormick, 1st Lt. Harlan T., from Brooks Field, Tex., to Philippines.

McCullough, 1st Lt. Arthur L., relived from duty at Kelly Field, Tex. Report to Mitchel Field, N. Y. at Kelly Field, Tex. Report to Mitchel Field, N. Y. M. Capt. Paul J., leave of absence, two months.

MePike, 1st Lt. George V., from Walter Reed Hospital, to McCook Field, O. (Sept. 1) Mathis, Capt. Paul J., leave of absence, two months.

Mathews, 1st Lt. Thos. K., leave of absence, 1odays.

Mayhue, 1st Lt. Don Waters, Field Artillery, transferred to Air Corps, Sept. 14. (Sept. 24) Mecce, 2d Lt. Loren Everest, from Atwood, Ill., to Brooks Field, Tex. (Sept. 24) Merrill, 2d Lt. Albert Elliott, Seattle, Wash, to Brooks Field, Tex., for training. (Sept. 4) Montgomery, 1st Lt. Harry G., relieved from duty in office of Chief of Air Corps and directed to Fairfield, O., for duty. Moore, Capt. Henry Nelson, from New York, to Washington, D. C. for training. (Sept. 11) Morgan, 1st Lt. John R., leave of absence, one month, 15 days.

Moser, 1st Lt. Jesse Ray, Specialist Reserve, from Dayton, O., to Langley Field, Va., for training. (Sept. 13)

Dayton, O., to Langley Field, Va., for training. (Sept.13)
Murray, George Leroy, Bolling Field, D. C., awarded commission as second lieutenant. (Sept. 9)
Nelson, Paul Burnham, Rt. C, 225 A., Visalia, Nelson, Paul Burnham, Rt. C, 225 A, Visalia Calif., awarded commission as second lieutenant

(Sept.9)

Noyes, 2d Lt. Edgar T., relieved from duty at
Kelly Field ,Tex. Report to Fort Crockett, Tex. O'Connor, Charles Winslow, Staff Sergeant, Observation Squadron, Mitchel Field, N, awarded commission as second lieutenant.

Observation Squadron, awarded commission as second lieutenant. (Sept. 9)
O'Neal, Joel G., Staff Sergeant, 11th Observation Squadron, Wright Field, O., awarded commission as second lieutenant. (Sept. 9)
O'Neil, Capt. Raymond E., from Advanced Flying School, Kelly Field, Tex., to Kelly Field, Tex. (Sept. 1)
Rahinson, Flying Cadet, Kelly

Ogden, Harvey Robinson, Flying Cadet, Kell Field, Tex., awarded commission as second liet ried, 1ex., awarded commission as second, retenant.

Owen, 1st Lt. Irvin Hayes, Specialist Reserve, ordered to active duty from Dayton, O., to Selfridge Field, Mt. Clemens, Mich., for train.

Sentinge Field, Mt. Clemens, Mich., for training.
Paul, 2d Lt. Wilfred J., from Advanced Flying
School, Kelly Field, Tex., to Crissy Field, Presidio, San Francisco, Calif.
Plummer, 2d Lt. William G., relieved from duty
at Kelly Field, Tex. Report to Selfridge Field,
Mich.

at Kelly Field, Tex. Report to Selfridge Field, Mich, Mich, Pope, 1st Lt. John Blakely, from Dallas, Tex., to Pope, 1st Lt. Leo. F., from foreign service, to Langley Field, Hampton, Va. (Sept. 4) Propst, 1st Lt. Rudolph W., from Chanture Field, Ill., to Panama Canal Zone. (Sept. 4) Propst, 1st Lt. Rudolph W., from Chanture Field, Ill., to Panama Canal Zone. (Sept. 9) Puryear, 1st Lt. Alfred L., from Langley Field, Va., to Walter Reed Hospital, Washington, D. C., for treatment. Pyle, 1st Lt. Carl W., order to sail Sept. 8 for Hawaiian Department revoked; signed to duty at Wright Field, O. (Sept. 14) Leave of absence, 15 days.
Raley, 1st Lt. Edward W., from foreign service, to Langley Field, Va.
Ramey, 1st Lt. Howard K., from foreign service, to Kelly Field, Tex. (Sept. 4) Randall, 2d Lt. Russell E., relieved from duty at Kelly Field, Tex. Report to Fort Riley, Kans. (Sept. 7) Raymond, Staff Sergeant George B., form Kelly Field, Tex., to Fort Crockett, Tex. (Sept. 24)

Reily Field, Iex. Report to Fort Riley, Kans.
Raymond, Staff Sergeant George B., form Kelly
Field, Tex., to Fort Crockett, Tex. (Sept. 21)
Reeve, Richard Dodge, Flying Cadet, Mitchel
Field, N. Y., commissioned second lientenant.
(Sept. 9)
Reid, 1st Lt. William Stanley, Specialist Reserve,
from Indianapolis, Ind., to Fairfield, O., for
training at Air Intermediate Depot. (Sept. 16)
Reinburg, Maj. George E. A., from Chanute Field,
Rantou, Ill., to Omaha, Nebr.
(Aug. 28)
Reynolds, Maj. John M., leave of absence, three
days.
Rich, 2d Lt. Benjamin Harrison, from Dayton, O.,
to Chanute Field, Ill., for training. (Sept. 14)

Riviere, 2d Lt. James Andrew, from Lake City, Fia., to Brooks Field, Tex. (Sept. 13) Rohhins, 1st Lt. Edward M., from foreign service, to Air Intermediate Depot, Fairfield, O.

Robertson, 2d Lt. Russell Earl, Cambridge, Mass., to Brooks Field, Tex., for training. (Sept. 4) Robinson, Allan McLeod, New York City, commissioned second lieutenant. (Sept. 9) Rogers, Elmer Jos. Jr., Flying Cadet, Langley Field, Va., commissioned second lieutenant. (Sept. 9) (Sept. 9) (Sept. 9)

Freigh, Va., commissioned second lieutenant.
(Sept. 9)
Stenseth, 1st Lt. Martinus, from 88th Division,
Minncapolis, Minn., and Seventh Corps Area, to
Air Corps Tactical School, Langley Field, Hampton. Va.
(Aug. 31)
Stevens, Capt. Alhert W., leave of absence, 7
(Sept. 21)

days. (Sept. 21)
Stinson, 1st Lt. David R., from Middletown, Par. to Panama Canal Zone. (Sept. 9)
Strauss, Maj. Harold A., relieved from assignment as assistant commandant of the Balloon and Airship School, Scott Field, Ill.; report to commanding officer, Scott Field, for duty. (Sept. 16)
Strehlow, Staff Sgt. William F., Kelly Field, Tex., retired.
Stuart, 2d Lt. Frank Bailey, orders for duty to Brooks Field, Tex., amended to read "for six months' course of instruction for reserve officers." (Sept. 7)

Tarro, John Albert, Witt, Ill., commissioned second lieutenant.

Taylor, John Osman, Montgomery, Ala., commissioned second lieutenant.

Taylor, Yantis Halhert, Flying Cadet, Ft. Crockett, Tex., commissioned second lieutenant. (Sept. 9)

Tillery, Manning Eugene, Beaumont, Tex., commissioned second lieutenant.

Timherlake, 2d Lt. Patrick W., relieved from duty at Kelly Field, Tex. Report to Langley Field, Va.

Toolier, 1st Lt. Bernard J., from foreign service, to the Commissioned Second lieutenant.

Toolier, 1st Lt. Gordon Tarhell, resignation of the Commissioned Second Lieutenant.

Walthidge, Donald Cornelius, Flying Cadet, Langley Field, Va., commissioned second lieutenant.

(Sept. 9)

Walthall 1st Lt. LeRoy from foreign service to

Walthridge, Donald Cornelius, Flying Cadet, Langley Field, Va., commissioned second lieutenant.

Walthall, 1st Lt. LeRoy, from foreign service, to Brooks Field, Tex.
Watts, Newell Edward, Kittery, Me., commissioned second lieutenant.
Weeks, Capt. Harold Eastman, from New York to Langley Field, Va., for training. (Sept. 9)
Wheeler, Clarence Daniel, Engineer Department, Nela Park, Cleveland, O., commissioned second lieutenant.
Whitesides, Capt. John G., from Langley Field, Va., to foreign service.
Wilkins, 1st Lt. Paul C., from foreign service, to Crissy Field, San Francisco, Calif. (Sept. 23)
Wilkins, 1st Lt. Arthur William, from West Palm Beach, Fla., to Mitchel Field, N. Y.
Wisclogel, Chas. Owen, Lafayette, Ind., commis-

Wisclogel, Chas. Owen, Lafayette, Ind., commissioned second lieutenant. (Sept. 9)
Wuest, Maj. Jacoh W. S., from foreign service, to Air Corps Balloon and Airship School, Scott Field, III. (Aug. 26)
Vielock Staff Sergeant Adam J., from Fort Crockett, Tex., to Kelly Field, Tex. (Sept. 24)
Volandt, Capt. William F., McCook Field, O., order assigning him to foreign service, revoked, (Sept. 13)

#### NAVY AIR SERVICE ORDERS

NAVY AIR SERVICE OF STATES OF THE Following Navy Air orders have heen issued as of the dates indicated in hrackets:
Arney, Lt. Claude B., detached Navy Yard, Norfolk, Va., to U.S.S. Camden,
Arthur, Lt. Samuel H., detached Naval Air Station, Pensacola, Fla., to Naval Air Station, Pensacola, Fla., to Naval Air Station, Yaval Operating Base, Hampton Roads, Va.

(Sept. 10)

Bartlett, Lt. Comdr. Harold T., detached Naval

Bartlett, Lt. Comdr. Harold T., detached Naval Air Station, Pensacola, Fla., to Burcau of Aero-nautics, and additional duty fitting out PN-10 planes. (Sept. 24) Bensoh. Chief Pay Clk. Lewis R., detached Naval Air Station, Lakchurst, N. J., to Navy Supply Depot. Brooklyn, N. Y.

Bierling, Pay Clk. Otto D., detached Bureau S. and A., to U.S.S. Langley. (Sept. 8)
Bowman, Lt. (jg) Roscoe L., detached Aircraft Squadrons, Scouting Fleet, to Naval Air Station, Pensacola, Fla. (Aug. 30)
Brereton, Ensign Wilke H., detached Naval Air Station, Pensacola, Fla., to U.S.S. Vestal.

Burke, Lt. (jg) Joseph P., (SC), detached Scouting Pleat, Squadron One, Aircraft Squadrons, Scouting Fleet, to Naval Hospital, League Island, Phila., Pa.

Cahanillas, Ensign Jose M., detached Naval Air Station, Pensacola, Fla., to U.S.S. Lawrence. (Sept. 11)

Cassaday, Lt. John H., orders June II, 1926, modified; to U.S.S. Aroostook. (Sept. 11)

Casstevens, Ch. Bosn. William M., detached U.S.S. Pittsburgh, to C. F. O. U.S.S. Lexington.

Csept. 27

Cecil, Lt. Comdr. Henry B., detached Bureau of Aeronautics, to aide of staff, Battle Fleet.

Cohh, Lt. Comdr. Elwood A., (SC), detached, 27

Cecil, Lt. Comdr. Henry B., detached Bureau of Aeronautics, to aide of staff, Battle Fleet.

Cohh, Lt. Comdr. Elwood A., (SC), detached, Office of Secretary of Navy, to U.S.S. Lexington.

Corwin, Lt. Fleet W., detached Navy Rife Team, Wakefield Rifle Range, Reading, Mass., to Naval Air Station, Anacostia, D. C.

Currier, Lt. Joseph H., detached 4th Naval District, to U.S.S. Shawmut.

Davison, Lt. Ralph E., detached U. S. S. Langley, to command VS Squadron 2, Aircraft Squadrons, Battle Fleet.

Doyle, Lt. Comdr. Rohert M., detached Bureau Navigation, to C. F. O. U. S. S. Lexington.

(Sept. 29)

Ford, Lt. Joseph E., (SC), detached Receiving Ship, Boston, Mass., to Scouting Plane Squadron One, Aircraft Squadrons, Scouting Fleet.

Scept. 29)

Fulton, Comdr. Garland, (CC), detached Bureau of Aeronautics, to Naval Air Station, Lakehurst, N. J.

Gherardi, Capt. Walter R., detached Bureau of Aeronautics, to Naval Air Station, Lakehurst, N. J.

Gillon, Lt. John G., despatch orders, June 15, 1926, modified; to Aircraft Squadrons, Scouting Fleet.

Gent. 23.

Gillette, Lt. Comdr. Claude S., detached Bureau Engineers, to C. F. O., U.S.S. Lexington.

Gent. 27)

Gillon, Lt. John G., despatch orders, June 15, 1926, modified; to Aircraft Squadrons, Scouting Fleet.

Charleston, S. C., to duty with squadron supply officer Aircraft Squadrons, Scouting Fleet.

(Sept. 27)

Hardy, Pay Clerk, Glenn P., detached Navy Yard, Charleston, S. C., to duty with squadron supply officer Aircraft Squadrons, Scouting Fleet.

(Sept. 28)

Harrell, Lt. Rohert H., detached V. O. Squadron 2, Aircraft Squadrons, Scouting Fleet.

Harrell, Lt. Robert H., detached V. O. Squadrons, 3. Aircraft Squadrons, Scouting Fleet, to U.S.S. Trenton.

Hasselman, Lt. George H., order June 26, 1926

(Concluded on page 328)



## "PEGASUS"

The light bomber built by Huff-Daland Company, Inc., won the Liberty Bell Trophy Race for Light Bombers at the 1926 Air Races in Philadelphia, Pa.

TI-TWO DOPE is used for the finish of wings, tail surfaces and fuselage of the "Pegasus"

DOPES, VARNISHES, ENAMELS DOPES. **PIGMENTED** 

> for aircraft services, have long been standard specification for manufacturers of America's outstanding aircraft.

TITANINE, Inc. Union, Union County, N. J.



REGISTERED TRADE MARK

# WITH the INDUSTRY

#### JACKSONVILLE-ATLAN-TA AIR MAIL OPENS

A SILVER-WINGED courier of a new era for Atlanta, Georgia and the South—the Stinson-Detroiter, 4-passenger cabin plane, owned by the Florida Airways Corporation, soared into view at 3:40 o'clock on September 15th, high over the downtown district of Atlanta. The plane landed five minutes later, on schedule, at the Atlanta municipal airport, Candler Field, having completed the 815-mile flight from Miami, Florida, to Atlanta, via Fort Myers, Tampa Jacksonville and Macon.

The Stinson plane, which only a week before had completed the 745-mile flight from Detroit to Atlanta in seven and a half hours, was welcomed by approximately 15,000 airminded Atlantians, more than 30 Army and commercial planes, the Atlanta 50-piece Police Band and the unanimous shrill of Atlanta's factory whistles and sirens. Pilot L. S. Flo taxied the plane directly in front of the reception platform. On the right of the review line were thirty Army planes including Douglas O2, DH4, M1, Curtiss JN6H and TW Fives, each with its pilot standing at attention in homage to the mail plane. The planes from Maxwell Field, Montgomery, Alabama and the Alabama National Guard Air Squadron of Birmingham visited Candler Field through the courtesy of Colonel Charles Danforth, Fourth Corp Area and R. E. L. Cone governor of the National Aeronautical Association for Georgia. On the left of the reception platform were a number of commercial planes under the supervision of "Doug" Davis with his Waco plane.

The mail plane discharged its load of more than 20,000 pieces of mail from Florida, Postmaster H. E. Ross of Jacksonville personally assigning the mail over to Postmaster E. K. Large of Atlanta.

Governor Clifford Walker of Georgia officially welcomed the mail plane, Pilot L. S. Flo and V. E. Chenea, vice-president of the Florida Airways. Henderson Hallman, chairman of the chamber of commerce aviation committee, introduced Miss Elizabeth Buchanan, daughter of Mayor pro tem Claude E. Buchanan, who christened the Stinson plane "Miss Atlanta."

Asa G. Candler, Jr., donor of the municipal airport of 300 acres, presented Miss Buchanan with a large bouquet of red and white roses tied with the red, white and blue air mail colors.

The first air mail to leave Atlanta departed at 7 a. m. under the pilotage of Carl "Ben" Eielson, trail blazer of Alaska's first air mail route from McGrath to Fairbanks. The southbound mail arrived at the farsouth air terminal, Miami, Fla., at 3:45 p. m.

More than 35,000 pieces of air mail passed over the route during the day, the flight being operated with Stinson-Detroiter, Ford-Stout, Curtiss-Lark and Travel Air planes under the pilotage of chief pilot N. W. Potter, C. B. Eielson, L. S. Flo, R. T. Freng, H. J. Brady and H. S. Turner.

Completion of C. A. M. No. 10 and Candler Field has been brought about chiefly through the work of Colonel Charles Danforth; Alderman W. B. Hartsfield, chairman of municipal aviation committee; Henderson Hallman, chairman of the chamber of commerce aviation committee and Asa G. Candler, Ir., donor of the field.

The schedule for this route follows:

THE SCHEUU	ic tor t	ms route	TOHOW	٥,
Southbound			Northbon	
6:00 a.m. C.T. L	.v. Atlar	ita Ar.	. 3:45 p.n	n. C.T.
4:00 a.m. E. I.	" Atlai		2 . 24/ 1/11	
	' Maco	n Lv.	. 3:50 p.n	1. "
11:10 a.m.		sonville ''	12:45 p.n	
1:50 p.m.	' Tamı	oa "	10:25 a.n	1. "
3 180 D. m.	" Fort	Myers "	8:55 a.n	
4.45 p.m. "	' Mian	ni "	7:00 a.n	1. "

The postage rate over all or part of this route, including rail connections, is 10 cents an ounce or fraction thereof.

#### NEW CHIEF NAMED FOR AIR MAIL SERVICE

POSTMASTER GENERAL NEW has announced the acceptance of the resignation of Stephen A. Cisler, of Denver, Colo., general superintendent, Air Mail Service, effective October 1.

Mr. Cisler is to be succeeded by D. B. Colyer, of Bement, Ill., now assistant general superintendent, Air Mail Service. Alvin E. Peterson, of New York City, will fill the vacancy caused by the elevation of Mr. Colyer.

#### N A T WILL CARRY PASSENGERS SOON

National Air Transport, Inc., completed the first three months operation of its thousand-mile Texas-Chicago line in August, with an average efficiency of over 97 per cent perfect.

In 91 days N A T planes have flown 184,000 miles, with cargo. Ferrying of empty ships and the transportation of executives brings the total mileage up to about 200,000 for the quarter. They have safely transported 22,669 pounds of mail, the daily load averaging 300 pounds. The N A T fleet, in addition to a new Ford all-metal monoplane equipped with three Wright Whirlwind engines, comprises 10 Curtiss Carrier Pigeous, a De Havilland and a Wright Whirlwind Travel Air.

Simultaneously with the closing of this first quarter-year of experimental flying, the general manager, Colonel Paul Henderson, recommended to his board of directors that passenger service be established just as quickly as the necessary equipment can be produced. This anticipates by two years and a half the program contemplated by the National Air Transport when it began operations May 12th.





Asa G. Candler, donor of Atlanta's Municipal Airport (right), and Miss Buchanan who christened the mail plane "Miss Atlanta."

#### TESTS OF SIKORSKY-35

THE plane S-35 was completed August 21st, 1926, and had its first test by taxing on ground. This test proved that the plane had full rigidity but it was found necessary to adjust the bearing on the left wheel and reduce the rubber shock absorber on the tail skid.

The first test flight was made on August 23rd, pilots being Captain Rene Fonck, Mr. M. Gluharoff, Mr. Igor I. Sikorsky, and passengers, Lieutenant A. P. Snody, U. S. N., chief engineer of the Sikorsky Manufacturing Corporation, and one mechanic. Duration of this flight was 35 minutes. The second flight was made the same day in the afternoon over New York City. The ship proved entirely satisfactory in every way and since these two first flights no alterations or changes have ever been made on the plane.

The weight of the machine empty was 9,703 lbs. and the equipment for the cross-Atlantic flight weighed 1,581 lbs. The span of the upper wing was 101', total area 1,095 sq. ft. The plane was equipped with three 425 h. p. Gnome-Rhone-Jupiter motors. From August 23rd, the day of the first flight and up to September 21st, the day of the unfortunate accident to the plane, twentythree flights were made, 250 passengers transported, 2,500 to 3,000 miles flown and the plane was in the air 23 hours and 50 minutes. Out of the 23 trial and test flights the following four of them were of outstanding interest and of an official or semiofficial character:

First—The flight of August 27th. On this flight the plane with a gross weight of 18,000 lbs., at an altitude of 750 to 1,000 ft., showed a speed of over 145 m. h. p. with all three motors running at 1,750 r. p. m.

Sccond—The flight of August 28th, altitude test. The gross weight of the plane was 16,500 lbs. and the plane reached an altitude of 17,000 ft. in 45 minutes with three engines running at 1,550 r. p. m. At this altitude the plane still had a very good climb confirmed by the sharp tip of the curve of the barograph. This continued climb indicated that the altitude above mentioned was from 3,000 to 4,000 ft. below the actual ceiling of the plane.

Third—The flight of September 7th. This day a load test was made in the presence of U. S. Army and Navy inspectors, Messrs George Bissel, S. W. Lavista and R. L. Jacobs. The weight of the machine on load-meters was as follows:

Left front wheel	6,450 lbs.			
Right front wheel	6,600 lbs.			
Tail	1,400 lbs.			
	<u> </u>			
Total14,450 lbs.				

In the above weight were included besides the plane itself, 575 U. S. gallons of gasoline and 53 U. S. gallons of oil.

The following additional load was taken on board in order to make the gross weight up to 20,000 pounds:

Gasoline		 			 	.1,945	lbs.
Sand					 	.1,714	lbs.
Passengers	3	 			 	.2,024	lbs.

Gross weight of the plane loaded as above was 20,133 lbs.

(a) Length of the run of the plane before the takeoff was 1,210 ft. and it was made in 21 seconds.

(b) Climb at sea level with three engines all at 1,550 r. p. m.

 Up to 500'
 .35 seconds

 Up to 1,000'
 .1 min, 15 sec.

 Up to 1,500'
 .2 min, 10 sec.

 Up to 2,000'
 .2 min, 56 sec.

 Up to 2,000'
 .2 min, 56 sec.

(c) Climb with two engines both at 1,550 r. p. m. from 1,900 ft.

(d) Second test of climb at altitude with two engines only from 3,200 ft.

(e) At an altitude of 3,500' a flight was made with only one central engine running and during 35 seconds the plane lost altitude of only 50'.

(f) Speed tests were made as follows: All three engines, 1,550 r.p.m.,

Fourth-On September 9th and 10th a flight was made from Roosevelt Field, Long Island to Washington, D. C. and return, the purpose of the flight being to test the fuel consumption and navigation instruments installed in the plane. In Washington one demonstration flight was made especially for representatives of the Bureau of Aeronautics, Navy Department, with Acting Chief of the Bureau, Commander H. C. Richardson at the steering wheel. Another flight was made for U. S. Army representatives and during this flight, Assistant Secretary of Commerce in charge of aviation, Honorable William P. MacCracken, was on board the plane. During most of the flights above Long Island, New York and also during the flights in Washington, the ship was flown many times on two motors only without losing altitude. During all of the 23 flights ten different expert pilots from the U. S. Navy and Army and the Sikorsky Corporation were at the controls of the plane and all of them unanimously expressed the opinion that the plane was exceptionally light on controls and had a remarkable maneuverability and stability in the air including flights when only one side motor was working. Several expert pilots expressed the opinion that the easiness on controls of the S-35 plane was more characteristic of a pursuit type plane than of a heavy multi-engined plane.

As mentioned above the weight of the plane S-35 empty and without navigation instruments and radio equipment was 9,703 lbs

The special equipment for the transatlantic flight weighed as follows:

Tanks 680	lbs.
Piping and special gasoline system. 295	1bs.
Starter 70	lbs.
Navigation instruments and their in-	
stallation 91	lbs.
Radio equipment and spare parts 215	lbs.
Chairs, tables, boxes, locks, lighting	
system, etc	lbs.
Total1,581	
The plane as equipped for the tra	
atlantic flight had a weight of 11,284	
On September 21st, the morning of the	
tempt to take off for the flight to Paris	the
following load was on the plane:	
Crew of four, 170 lbs 680	
Gasoline (2,290 U. S. Gals.) 13,300	
Oil (200 U. S. Gals.) 1,600	lbs.
Air bags and air rafts	1bs.
Provisions (food, water, clothing,	
etc.) 120	lbs.
Additional landing gear 200	lbs.
Total	11
The total weight at takeoff was there	iore
as follows:	11
Weight empty	
Special equipment	IDS.

#### NEW HAVEN AIR MEET

Total weight...........27,384 lbs.

THE first all-seaplane air meet on the Atlantic Coast was held at New Haven, Conn., Sept. 26th. Fourteen planes were entered including two Vought UOs from Hampton Roads, piloted by Lieutenants Welbourn and Kernodle. The main feature of the meet was its continuous action. There was something in the air all the time to hold the spectators' interest during the entire afternoon. A short course with a home pylon directly in front of the reviewing stand provided a continuous view of all contestants at every stage of the races.

George Rummill of Lake George, N. Y., flying a Curtiss Seagull was high prize winner of the day, starting off with the "On-to-New Haven" prize. He then took first place in the seaplane race for commercial flyers and finished up with second prize in the load carrying contest.

The list of winners and runners-up is as follows: "On-to-New Haven" race-first prize, \$100, won by George Rummill, Lake George, N. Y. Second prize, a barrel of airplane oil, won by James Mulcahy, Port Washington, N. Y. Seaplane race-silver cup, won by Rummill; second, a clock offered by the New Haven Clock Company, won by Mulcahy. Speed boat race-cup, won by Ralph Pride in "Oh Boy." Second-Claus Johnson, Short Beach. Load contest-two cups offered by Spector, New Haven jeweller and by the New Haven Advertising Club won by Rogers. Second-clock, won by Rummill. U. S. Navy seaplane race-New Haven Register cup, won by Lieut. Max Welbourn, second, Lieut. M. H. Kernodle.

A dinner for all pilots was held at the Café Mellone at which the brothers Jack and Charles Tweed, who operate the New Haven Air Terminal, were presented with watches from the citizens of New Haven for their services in aviation,



P. R. T. air terminal at Hoover Field completed in 25 working days. View shows Washington Monument and the Capitol.

# AERO EXHIBITS AT THE SESQUI EXHIBITION

M ORE than 8,600 horse power is the combined potency represented by forty aeronautical engines that, arranged in rectangular formation, surround a group of interesting exhibits installed by the Department of Aeronautics of the Sesquicentennial International Exposition in Philadelphia.

The aeronautical exhibits are housed in the western end of the big palace where also are installed the displays relating to other means of transportation, rail, marine and vehicular. The huge building provides seven and a half acres of space and is known as the Palace of United States Government Exhibits, Mines, Metallurgy and Transportation

The eastern half of the building contains the exhibits prepared by various departments of the Government. Among them is that of the National Advisory Committee of Aeronautics. The visitor may learn just how and why an airplane flies. He can study a model poised in an air stream, showing the lift distribution on the wing section, and another showing the use and operation of the various controls.

A model of Langley's flying machine is in the section devoted to exhibits from the Smithsonian Institution.

The Exposition Department of Aeronautics display is enriched by loans of aircraft and apparatus from the United States Army and Navy aviation divisions. An arresting feature in the NC 4, more than 68 feet long and with wing span of 123 feet the first airplane to cross the Atlantic, May 8-31, 1919. Her 28,000 pounds of weight was propelled by four Liberty motors combining 1,600 h.p.

Motors of this type are among the collection of forty, also loaned by the Navy Department, and in which are those of British, French, German and Austrian make, as well as those of the leading American producers. They range from 56.5 h.p. to 450 h.p.; 3 to 12 cylinders, air cooled and water cooled. They include all important models of the last ten years.

The M.S. plane attracts considerable attention. It may be stowed aboard a submarine and assembled on deck.

The British "Bantam" pursuit plane with a 170 h.p. engine shows the ravages of war

Various types of propellers and other aircraft parts are exhibited, including a seaplane float on a handling truck; launching car for catapult; wing panels; gasolene gravity tank; oil tank and radiator, etc., displayed so that the visitor may make a close-up inspection of them.

Prominent manufacturers of aircraft, parts and accessories have individual exhibits of interest in the space devoted to the Department of Aeronautics. The Curtiss Aeroplane and Motor Company has an extensive display near to the exhibits loaned by the U. S. Navy; appropriately, so, since the huge NC is a Curtiss-built plane.

The OX 5 Curtiss motor of 90 h.p., a model of 1917, is exhibited. In contrast may be seen the Curtiss D 12 of 440 h.p. used in the observation and racing planes of the U. S. Army and Navy today.

A fac-simile of the Curtiss racers which won the Schneider and Pulitzer cup races are shown. Near to it are placed the trophies themselves, together with the Collier trophy awarded to Dr. S. A. Reed for the invention of the metal propeller. The Jacques Schneider trophy is awarded for high speed seaplanes and is competed for annually by the fastest American and European seaplanes and flying boats. The Pulitzer trophy is for the greatest speed over a prescribed course by airplane. It was held by Lieutenant Cyrus Bettis.

The Wright Aeronautical Corporation exhibit centers about the Wright-Whirlwind 200 h.p. aviation engine. Both the complete engine and all of its parts may be inspected.

Amateur aviators find interest in a lowpried three-scater plane equipped with 90 h.p. Curtiss motor. The plane is the Waco, a product of the Advance Aircraft Co.

A first aid to cotton growers and others raising large crops is exhibited by Huff-Daland Airplanes, Inc. It is a plane to dust crops with poison for the extermination of the boll weevil and other insects. It is equipped with a 400 h.p. Liberty engine, carrying 1,600 pounds of calcium arsenate.

Important parts and accessories for aircraft are exhibited by a number of firms: Balsam-Wool, a product designed to deaden the sound of the motor in flying machines and also to temper the atmosphere within, is on exhibition. Lubricating oils, marinc glue, streamline wires, plywoods and plymetals, ball bearings and other parts have representation. An instrument hoard of upto-date construction is of unusual interest. A Sperry airport landing light exhibited is of 30,000,000 candle power.

An especially beautiful and comprehensive display of air photographs shows the camera work of Captain Victor Dallin of Lansdowne, Pa. His aerial views of Philadelphia and the Sesquicentennial Exhibition grounds have been published throughout the eountry as the clearest and most detailed views of this vicinity.

Exhibitors in the Exposition Department of Aeronautics section include: Curtiss Aeroplane and Motor Co., Garden City. N. Y.; Wright Aeronautical Corporation. Paterson, N. J.; Huff Daland Airplanes, Inc., Bristol, Pa.; Edo Aircraft Corporation, College Point, N. Y.; Advance Aircraft Company, Troy, Ohio; Sperry Gyroscope Company, Brooklyn, N. Y.; S. K. F. Industries, Inc., N. Y. C.; Fairchild Aerial Camera Corp., N. Y. C.; Vacuum Oil Co., Philadelphia, Pa.: Stewart Hartshorn Co., N. Y. C.; MacWhyte Co., Kenosha, Wis.: Wood Conversion Co., Cloquet Minn.: Pioneer Instrument Co., Brooklyn, N. Y.; Haskelite Mfg. Corp., Chicago, Ill.; L. W. Ferdinand & Co., Boston, Mass.; Victor Dallin, Landsdowne, Pa.; O. K. Blake, St. Petersburg, Fla.; Air Service Publishing Co., Washington, D. C.; Aviators Preparatory Institute, N. Y. C.

The Exposition will be open until De-

#### AIRCO AMPHIBIAN TO BE READY THIS MONTH

JOHN STELLING, President of the Aircraft Corporation of America, advises us that the first Airco twin-motored amphibian will be completed by October 30th. The hull of the Airco is of conventional wood flying boat construction but covered with a protective shell of sheet duralumin. The interior is fitted up luxuriously to accommodate five passengers beside the pilot. It will be powered with two Wright Whirlwind motors. Aircos will be produced in both open and closed models.

#### STREAMLINE TIE RODS ON FIVE TOUR WINNERS

POUR of the five winning planes in the Commercial Airplane Reliability Tour, August 7 to 21, were equipped with Mac-Whyte streamline tie rods. Walter Beech's Travel Air plane, which finished first in the tour; Stinson's Detroiter, and two Waco planes were all rigged with streamline tie rods.

The Reliability Tour, watched with great interest by the industry, emphasized the necessity of all devices which make for increased flying efficiency. The record of these four MacWhyte-equipped winners is an indication of the progress which is being made in the development of efficient commercial flying in this country

#### NEW ENGLAND NEWS

By Daniel Rochford

APTAIN A. RAYMOND BROOKS Capitally A. Marianova, dividing his time between flying as passenger in the air mail planes of the Colonial Air Transport, Inc., and driving a rugged flivver through the hills and valleys of the country along the Boston - Hartford - New York air mail route, laid out during the first two weeks of September a system of lighting beacons located every ten miles and at seven emergency and regular landing fields on which New England's chief aviation business will carry on this winter. Brooks, a war ace, was appointed by Secretary McCracken to do the job. The fields are located at Framingham, Whitinsville, Webster (near Rockville), Brainard Field (Hartford), the field at Bethany, Conn., and one at Eastview in the Georgetown - White Plains district of New York.

The chief aeronautical event of the month in New England in point of novelty was the seaplane meet at New Haven, September 25th. The meet was sponsored by a group of naval reservists headed by John Tweed of the New Haven Air Terminal Company,

Lieutenant Walter C. Greene of the Navy, on duty as executive officer at Squantum, Mass, joined the "hundred hour club" last month.

Flight Sergeant Richard Cobb, stationed at the Boston Airport, towed targets and performed observation missions for the coast



Underwood & Underwood,

Miss Lydia Pinkham Gove of Salem flew from Los Angeles to Boston Airport in a Travel Air plane.

artillery National Guard of New York, Massachusetts and New Hampshire, flying at Forts H. G. Wright, Terry, and Rye Beach, N. H., early in the month.

One of the most unexpected and successful publicity air stunts resulted from the trip home from Los Angeles by airplane by Miss Lydia Pinkham Gove of Salem, Mass. She is said to be the first woman to fly across the United States and the first transcontinental air taxi customer. She flew in a Travel Air powered with Wright Whirlwind engine. On reaching home she and her

companion, a young Harvard divinity student, were overwhelmed with newspaper publicity in Boston. Miss Gove, who is one of the wealthiest women in the State, decided to offer the return trip as an essay contest prize. So much interest resulted that she booked two girls west and two boys east from Los Angeles. The girls had an eventful trip out by plane, motor trouble forcing change of engine. A new engine was being tested and the pilot smashed the plane, forcing the Boston Airport Corporation to rush along another plane and continue the trip. The boys rode the trains out and came back by plane.

Old Orchard Beach, Maine, had the distinction of carrying a woman 100 years old as passenger in one of Harry Jones' planes. She said she'd be back on her 105th birthday.

The Naval Reservists at Squantum flew consistently high totals the past month, running into 100 hours weekly on two occasions. The Boston Airport flying for service planes averaged over fifty hours per week and cross country trips to the Philadelphia air races, to Portland, Mitchel Field, Langley Field (Virginia), and other points added over twenty hours weekly.

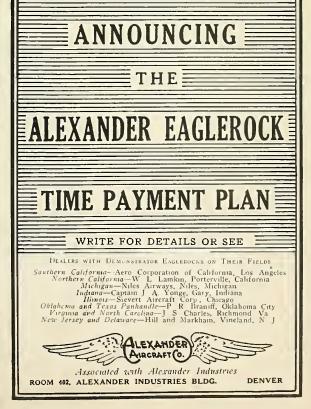
The reorganization of the Colonial Air Transport, Inc., the third week of September has resulted in an even more hopeful attitude toward the air mail in New England.

Two new commercial hangars are under way at the Boston airport. Colonial and the Boston Airport Corporation are the builders.

# CURTISS K6 MOTORS in perfect condition equipped with Bosch magnetos PRICE \$1250 EACH Write: Headquarters

Air Mail Route C.A.M.5, Boise Airport,

Boise, Idaho



#### DETROIT NEWS

By FRANK BOGART

LTHOUGH threatened at times during A LTHOUGH threatened at this the past year with almost complete immersion in a flood of talk as to its acquisition of the post of leadership in the new industry of commercial aviation Detroit has made progress during 1926 toward its goal as an aircraft center.

Just how those now prominent in both manufacturing and operating circles are going to weld a program that will lead to definite achievements before another fall rolls around is the subject needing the greatest thought at this moment.

Beside the airplane division of the Ford Motor Company, Detroit has three firms actively manufacturing airplanes; one engaged in building the experimental metal sheathed dirigible (designed by Upson) for the Navy; and one operating firm, the Stout Air Serv ice, Inc., whose 142-mile line to Grand Rapids has been two months in operation with encouraging results, although profits are not expected for another twelve months. By that time William B. Stout expects to have established connection with St. Paul.

In aircraft motors Packard assumes the same position in Detroit as Ford in the field of plane builders. There are three other concerns who will have motors of different types and power ranges on the market by 1927, among whom is Captain Rickenbacker, who is producing a light plane engine at his Detroit Aircraft Engine Works.

The new wheel and brake unit of the

Sauzedde Corporation, used by Stinson and Verville, has gone into production in Detroit.

Upwards of \$5,000,000 is invested, exclusive of the Ford holdings. Stinson has built ten machines, Buhl Verville five and the Hess Airplane Company two or three.

About fifty Detroit business men have done all the investing in aircraft projects in Detroit since 1920 when William B. Stout first began to exploit his all-metal monoplane that is now the standard equipment of the Ford air lines, built by the Ford Motor Company, with all patents owned solely by Henry Ford. The Ford Company believes it has perfected the threemotor type and with its new shops about ready to open, a building program calling for 100 planes in as short order as possible is about to be launched.

The recent exodus of Detroit moncy into operating ventures in the West, South and Northwest has somewhat disturbed the heads of the local concerns. Reed M. Chambers has gained substantial backing for Florida Airways, Inc., which has just opened its new service from Atlanta to Jacksonville, connecting with the Tampa-Miami route that opened in April. On this new line Stinson cabin machines are used. Ford monoplanes do the stretch across Florida, William A. Mara, secretary of the Stinson Company, helped Chambers get his money, He also assisted in financing the Northwestern Airways, Inc., which is to take over the mail contracts Charles Dickinson allowed to lapse between Chicago and St. Paul. Western Air Express, which has been flying the Salt Lake-Los Angeles route since April and making steady progress out of the red ink, has some Detroit money principally that of George M. Holley, Detroit is also largely represented in National Air Transport.

But Detroit as yet has no municipal airport. Nor have the real estate mcn and bankers been able to accomplish that still more desirable thing, an airport with factory sites adjacent.

Lack of landing fields prevents both the projected National Guard and Naval Reserve aviation units from obtaining their federal equipment.

The schools and universities of Detroit and Michigan are flooded with requests from students for aeronautical training. Interest is aroused as never before. Everyone is talking flying and many are really flying.

But things are still proceeding in a hit or miss style. There is a lack of universal understanding as to what the city is striving to accomplish. Thousands were raised and thrown away in a futile arctic expedition, which may or may not be revived this winter. Meanwhile a meritorious project such as the reliability tour of commercial airplanes for the Edsel B. Ford trophy stands with a \$5,000 deficit on the doorstep of the Detroit Board of Commerce, which did all the work and got all too little of the credit. That will be wiped out and definite steps toward the organization of the 1927 tour will be taken in time to prevent another such deficit



#### SCHNEIDER CUP RACE POSTPONED TO NOV. 11

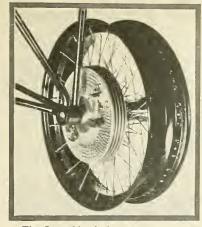
THE Schneider Cup races, which were to have been held at Norfolk during the week of October 24, have been postponed until November 11. Delay in delivery of materials for the Italian planes entered is understood to be the cause of the postponement. The navigability tests will start November 9.

#### THE SAUZEDDE WHEEL

PREPARATIONS are now being made for the production of the first airplane wheel with an integral brake by the Sauzedde Corporation, which has just moved its plant from Mt. Clemens to 209 E. Baltimore Ave., Detroit.

The brake is the development and invention of Claude Sauzedde after having collaborated with several airplane manufacturers who told him they favored the use of brakes providing efficient apparatus could be provided. His first job was to develop a brake for the Stinson Detroiter to replace the brakes with which Eddie Stinson equipped his first plane.

In the second annual Commercial Airplane Reliability Tour for the Edsel B. Ford trophy this year, there were four planes equipped with the brakes. They are the Stinson, two Buhl-Verville Airsters and the Ford. Other manufacturers have ordered the brakes and may place them on their new machines. A set of the brakes are now



The Sauzedde airplane wheel brake.

at McCook Field for official government tests of their efficiency.

The wheel is of light construction with spokes, hub and axle of an alloy composition. The spoke arrangement cares for every possible strain which will be met on landing or taxiing across rough fields. There are three banks or spokes, 32 in one and 16 in each of two others. The brake mechanism is self-energizing and operates with equal force in forward and reverse motion of the wheel. A wire, enclosed usually in the steel tubing of the landing gear, transmits the force to the brake from the rudder bar pedals in the cockpit.

#### BENEFIT AIR CIRCUS

THE American Legion of Nassau County, Long Island, N. Y., staged an air circus on Sunday, September 26th, that kept the 12,000 spectators heads up all afternoon. It was put on to establish a relief fund for the needy ex-service men of Nassau County.

All events were run over a triangular 10mile course. Lieut. Frank Rach won the National Guard race in the same Jenny with which he won the same event at the National Air Races in Philadelphia. Lieut. Kendrick Noble was second in a Consolidated training plane. The OX5 race was won by Roy Schultz in a Waco 9; Jimmie Ray in a Pitcairn, second. The Free-for-All was won by George Wiess in the Pioneer-Travel Air, winner of the Commercial Reliability Tour. Jimmie Ray in a Pitcairn won second.

A formation of pursuit planes stationed at Philadelphia for the Sesquicentennial performed a series of formations and stunts and returned to their home field without landing. Immediately following this, Pilot MacMullen put on a sky-writing exhibition, writing the name "Gene" in the sky in honor of the new heavyweight champión.

Other features of the afternoon were parachute jumping by Gene Brundage and James Mulcahy, who made their jumps from an altitude of 1,500 feet; Otto Miller, former catcher of the Brooklyn baseball team, caught a baseball tossed to him by M. M. Merrill of the Curtiss Exhibition Company from an Oriole.

\$800

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New clipped-wing

with Government-overhauled OX5 motors installed..... 900 Standard Airplanes with new OX5 motors installed. 1200 

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USED STANDARD J1 AIRPLANES AT PRICES RANGING FROM \$650 TO \$750 

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DICTIONARY OF AVIATION
By Robert Morris Pierce. 4278 Words and
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#### SOUNDS AMPLIFIED FROM FLYING AIRPLANE

A T the National Air Races last month a unique innovation in aeronautics was presented. Over the field there flew a giant singing and talking bird weighing approximately six tons—sending forth music which could be heard by the thousands of spectators on the ground. The human voice and other sounds were so powerfully amplified and the purity of tones so well preserved that messages and programs were transmitted and projected earthward from the plane in full flight.

The demonstration was made by the Plane Speaker Corporation of Philadelphia, Engineers of the Bell Laboratories and Graybar Electric Company, who designed and installed the amplifying apparatus, assisted in adapting the equipment to this new art of communication from the sky.

The apparatus employed is known technically as a Western Electric No. 1 Public Address System. As installed in the twinmotored Sikorsky plane the equipment weighed approximately half a ton.

The entire amplifying apparatus, consisting of a microphone, amplifier panels with the necessary batteries and power supply apparatus, control switches and special loud speaking projectors, was mounted entirely within the body of the plane. No part of the equipment was visible from the outside. The three special loud speaking projectors were mounted vertically, one in back of the other, and with the bell end pointing earthward. Forward of the projectors and in a position directly between the wings was mounted, pendulum fashion, the amplifier panels and power apparatus. The amplifier panel was suspended by means of shock cords and tension springs in order to prevent injury to the equipment during take-off and landing operations. A close talking microphone constituted the medium by which messages and music were directed into the amplifying equipment.

#### PROFESSOR BASQUIN IOINS HASKELITE CO.

PROFESSOR O. H. Basquin who for twenty-five years has been on the staff at Northwestern University has resigned from the faculty to take charge of the engineering department of the Haskelite Manufacturing Corporation with headquarters in Chicago. He has been acting as consulting engineer for this company since its organization

His experience in the field of strength of materials will peculiarly fit him for the problens he faces in connection with the production and application of Haskelite, the structural plywood, and Plymetl, its steel faced companion. These products are used for a wide variety of applications where known physical properties are the first requisites. The process of production in the Haskelite plant, must, therefore, be carefully safeguarded to insure absolute uniformity in strength, weight, and other properties. Professor Basquin will devote considerable time and effort to this phase of the work.

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#### GEN. O'RYAN HEADS COLONIAL AIR MAIL

M AJOR GENERAL JOHN F. O'RYAN has been elected to succeed W. Irving Bullard as president of the Colonial Air Transport, Inc., which holds the government contract for the transportation of mail between New York, Hartford and Boston. Mr. Bullard resigned to become chairman of the executive committee of the corporation.

General O'Ryan, who commanded the 27th Division during the World War, has been for the past five years a member of the New York State Transit Commission and has had unprecedented experience as an organizer.

J. T. Trippe, former managing director, who was instrumental in organizing and developing the company to its present state of efficiency, will become vice-president.

#### SHERMAN M. FAIRCHILD VISITING EUROPE

THE executive head of the Fairchild Aviation Corporation, Sherman M. Fairchild, is in Europe on a visit to various aircraft centers. Before sailing on the Aquitania, he announced the appointment of two new territorial representatives for the Fairchild Aerial Surveys, a subsidiary of the parent corporation. They are the Robertson Aircraft Corporation of St. Louis, Missouri, and E. A. Johnson of Dayton, Ohio. In connection with the St. Louis appointment Mr. Fairchild disclosed that his firm had been awarded a contract for an aerial



12-year old lad, S. D. Heckert, won an air trip from Kansas City to Philadelphia as a model contest award.

survey of the Missouri River from St. Louis to Yankton, South Dakota,—a territory of approximately 900 miles. This is the largest contract of its kind to be awarded to a civilian concern in the Middle West. The work will be completed within 90 days of the signing of the contract.

# MINIATURE AIRCRAFT FLIERS ARE ACTIVE

THE outstanding event of 1926 in Miniature Aircraft Fliers undoubtedly was the August tournament staged in Kansas City, Mo., by the Rotary Club cooperating with the city playgrounds, and all directed by Terence Vincent of Chicago.

Instructions were given in backyards, in

parks and on playgrounds, in the Hotel Baltimore every morning from 9 till 10 o'clock,

The boiling winds of the Kansas City hills bothered the M.A.F. lads considerably, until the now famous Locke monoplane was discovered and brought into action. It has a 33-inch stick with a 15-inch wing and 9-inch elevator, a 5-inch prop., and 32-inch rubber motor. The Locke monoplane rode the wind and made flights regardless of the "boiling breezes." The \$1,000 prize—a round trip to National Air Races—was won by a 12 year old lad, Stephen D. Heckert. He was flown on a NAT mail plane between Kansas City and Chicago.

The accompanying illustration shows Heckert, his mother and pilot Paul Johnson just before departure of the NAT plane.

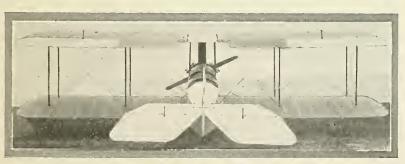
#### STINSON PLANE TOOK 848 LBS. ON FORD TOUR

N the 1926 Commercial Reliability Tour the Stinson "Detroiter" was credited with 640 lbs. as its certified contest load. Through error in an advertisement by the Wright Aeronautical Corporation last month, the load was reported as 550 lbs. As a matter of record, the Stinson plane never had a load of less than 790 lbs. (exclusive of pilot and fuel); and in Cleveland they took aboard a fifth passenger weighing 182 lbs., arriving at Ford Airport at the end of the tour with a load of 848 lbs. The Wright Aeronautical Corporation has requested us to bring this important increase in performance to the attention of our readers.

## THE NEW STANDARD J1 COMMERCIAL AIRPLANE

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WE recommend the Standard J1 Commercial to be the best all-purpose commercial ship on the market today. It embodies pleasing appearance, nice performance, large pay load, quick take off, rapid climb, exceptionally slow landing speed, good top speed and excellent maneuvering qualities, especially in windy weather.

All wings have beautiful brand new cotton or linen, natural finish. The entire ship is new and has never been flown. Assembling from war surplus materials allows us to furnish this ship at a remarkably low cost. Complete fuselage, tail assembly and ailerons are finished with the best grade mercerized cotton and six coats best quality new production aluminum pigmented dope.

Span over all (upper and lower wings) 31

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field, flight tested.

ft. 6 in.; gap 6 ft.; dihedral 0 degrees; sweepback 5 degrees; stagger 7 inches; weight with OX5 motor (empty without fuel, oil or water) 1275 pounds; fuel 285 lbs.; pilot 170 lbs.; pay load 400 lbs.; total weight fully loaded 2130 pounds.

Performance with OX5 motor: maximum speed, 85 m.p.h. Cruising speed, 75 m.p.h. Landing speed, 30 m.p.h. Climb in 10 minutes, 3000 ft. Radius of 350 miles. Ceiling 12000 ft.

We are assembling about 75 of these ships from our immense war surplus stock. Most of them are being purchased by old experienced pilots,

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modified, to Aircraft Squadrons, Battle Fleet. Havill, Lt. (Tinton H., detached U.S.S. Angeles, to Naval Air Station, Lakehurst, Angeles, to Nava, A. (Sept. Hubbard, Ensign Crichton N., detached N. Air Station, Pensacola, Fla., to U.S.S. Reid, (Sept.

Air Station, Pensacola, Fla., to U.S.S. Reid.

Johnson, Lt. Charles M., relieved duty command Naval Air Station, Rockaway Beach, L. I., V. to continue duty executive office, Rockaway Beach, L. I., V. to continue duty executive office, Rockaway Beach, L. I., Kendall, Lt. Henry S., detached third Naval District, New York, to command Naval Air Station, Rockaway Beach.

Kraus, Comdr. Sydney M., detached Bureau of Aeronautics, to temporary duty Naval Air Station, Lakehurst, N. J. (Sept. 1) Linholm, Ensign, Albert R., detached Naval Air Station, Pensacola, Fla., to U.S.S. Charles Ausburn.

Lynch, Lt. William A., order, May 28, to Naval Air Station, Pensacola, Fla., revoked; detached U.S.S. Quail, to duty nearest naval district.

Lyon, Lt. Rossmore D., detached U.S.S. Langley, to C. F. O. U.S.S. Saratoga. (Sept. 21) McElroy, Ensign Frederick K., detached Naval Air Station, Pensacola, Fla., to U.S.S. Dale. (Sept. 27) McKay, Lt. James H., detached V. O. Squadron 3, Aircraft Squadrons, Scouting Fleet, to U.S.S. Detroit.

Detroit. (Sept. 2)
Moore, Ensign Elliott M., detached Naval Air
Station, Pensacola, Fla., to U.S.S. Arkansas.
(Sept. 23)

Slatton, Pensacora, Maria (Sept. 23)
Pennington, Lt. John A., detached V. A. Squadron
I. Aircraft Squadrons, Scouting Fleet, to Naval
Air Station, Naval Operation Base, Hampton
Roads, Va.

Canada, Rahh G., detached U.S.S.

Arr Station, Roads, Va.
Pennover, Lt. Comdr. Ralph G., detached U.S.S., Utah, to Bureau of Aeronautics. (Scpt. 10)
Perkins, Ensign Albert N., detached Navy Rifle Team, Wakefield, Rifle Range, Reading, Mass., to temporary duty Naval Air Station, Pensacola, (Aug. 28)

to temporary duty Naval Air Station, Pensacola, Fla.
Pratt, Lt. (5g) John L., detached V. O. Squadron 3, Aircraft Squadrons, Scouting Fleet, to U.S.S. Raleigh.
Price, I.t. John D., detached U. S. S. Langley, to c. f. o., U. S. S. Saratoga.
(Sept. 21)
Raney, Asst. Pay Clk. Charles B., detached VO Squadron One, Aircraft Squadrons, Battle Fleet, to U. S. S. Hear Urginia. (Sept. 11)
Reilly, I.t. George L. (D. C.), detached Navy Yard, Philadelphia, Pa., to U. S. S. Sheamit. (August 28)
Roberls, Lt. Frederick W., detached V. O. Squadron 3 (Concord) Aircraft Squadrons, Scouting Flect, to Naval Air Station, Pensacola, Fla. (August 30)

Rodgers, Comdr. John, died August 27, 1926, at Naval Hospital, League Island, Philadelphia, Pa.

Naval Hospital, League Island, Philadelphia, Pa. (Sept. 8)

Smiley, Li. Curtis S., detached Naval Air Station, Pensacola, Fla., to U. S. S. Sirius. (Sept. 10)

Solherg, Lt. Thorwald A., detached U. S. S. Shawmit, to Engineering Station, Annapolis, Md.

Stewart, Lt. (j. g.) Edmund T. (S. C.), detached 4th Naval District, Philadelphia, Pa., to. c, f. o. U. S. S. Lexington.

Thomas, Lt. Robert W., (MC), detached Naval Air Station, San Diego, Calif., to U. S. S. Melville.

Van Patten, Lt. Comdr. Ellsworth H., detached Bureau S. and A., to Virgin Islands. (Sept. 15)

Whiting, Comdr. Kenneth, detached Bureau of Aeronautics, to c. f. o. U. S. S. Sarataga.

Wilking Ch. Meah. William W. (Sept. 15)

Wilkins, Ch. Mach. William W., detached Naval Air Station, Pensacola, Fla., to c. i. o. U. S. S. Saratega.

Wilkins, Ch. Mach. William W., detached Naval Air Station, Pensacola, Fla., to c. i. o. U. S. S. Williams, Lt. John C., detached Aircraft Squadron, Scouting Fleet, to Naval Air Station, Pearl Harbor, T. H.

Wilson, Comdr. Eugene F., detached Bureau of Aeronautics, to temporary duty Naval Air Station, Pensacola, Flaph F., detached Bureau Aeronautics, to Naval Attache American Embassy, Rome, Italy.

(August 25)

#### MARINE CORPS AIR ORDERS

T HE following Marine Corps orders have been issued as of the dates indicated in brackets: Conradt, 2d Lt. P. E., upon completion of course detached Naval Air School, Pensacola, Fla., to Naval Air School, NOB, San Diego, Calif. (Sept. 20)

Guymon, 1st Lt. V. M., upon completion of course detached Naval Air School, Pensacola, Fla., to Marine Barracks, Quantico, Va., for aviation (Sept. 20)

Marine Barracks, Quantico, Va., for aviation duty.

Harmon, 2d Lt. J. C., upon completion of course detached Naval Air School, Pensacola, Fla., to Marine Barracks, Quantico, Va., for aviation duty.

McHugh, 2d Lt. J. B., upon completion of course detached Naval Air School, Pensacola, Fla., to Marine Barracks, Quantico, Va., for aviation duty.

Stedman, 1st Lt. L. B., Jr., MCR, on September 10, 1926, assigned to active duty for training at the NAS, NOB, San Diego, Calif.; on September 29, 1926, relieved from active duty.

Thomas, 2d Lt. E. A., upon completion of course detached Naval Air School, Pensacola, Fla., to Marine Barracks, Quantico, Va. (Sept. 20)

Weir, 2d Lt. F. D., upon completion of course detached Naval Air School, Pensacola, Fla., to Marine Barracks, Quantico, Va. (Sept. 20)

White, 2d Lt. T. B., upon completion of course detached Naval Air School, Pensacola, Fla., to Naval Air School, NOB, San Diego, Calif. (Sept. 20)

#### MANY BUREAUS UNITE FOR AERO RESEARCH

S TUDY of aeronautical problems concerned with flying in fog or at night and with fog dissipation will be the first step in the work of a committee made up of representatives of Assistant Secretary Davison of the Army and Assistant Secretary Warner of the Navy, and Assistant Secretary Mac-Cracken of the Department of Commerce, co-operating with Harry F. Guggenheim, President of the Daniel Guggenheim Fund for the Promotion of Aeronautics. Representatives of the Post Office Department and the Weather Bureau will also co-operate in the work of the committee. This step completes the co-ordination of research work in aeronautics that several of the Government agencies and the Guggenheim Fund have been carrying on.

Experts of the United States Army have already done valuable work at McCook Field in the direction of perfecting radio control of flying. Meanwhile, the Bureau of Standards of the Department of Commerce has made important laboratory developments. The Post Office Department has given special attention to the lighting of fields for night flying in the practical appli cation of lighting along airways. The Daniel Guggenheim Fund has just finished a careful survey of aeronautical progress in the United States and abroad.

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used JN4D airplane, \$1075; new J-1 Standard airplane, (less motor, radiator, propeller and instruments) \$850; new Hispano-motored Standard \$1350.

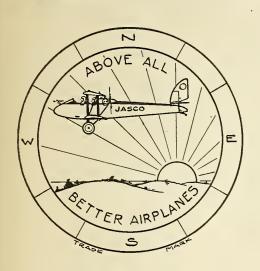
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# THE DEPARTMENT OF COMMERCE AIR PLANS

WILLIAM P. MacCRACKEN, JR., Assistant Secretary of Commerce in charge of the newly organized aeronautics branch, issued on September 22nd a statement detailing all phases of the aeronautical activities of the Department of Commerce. Following will be found extracts from Mr. MacCracken's statement:

THE AIR COMMERCE ACT OF 1926

With the approval by the President, on May 20, of the Air Commerce Act of 1926, there was laid "the legislative cornerstone for the development of civil aeronautics in America".

Under this Act, the Secretary of Commerce is charged, generally, with the encouragement and regulation of the use of aircraft in commerce, the immediate control to be under an Assistant Secretary for Aeronautics to be appointed by the President.

Briefly, the Secretary will administer the Air Commerce Act and generally foster air commerce, and for such purpose he will:

Encourage the establishment of airports, airways and other air navigation facilities. Study the possibilities of the development of air commerce, industry and trade.

Establish and maintain civil airways; operate and maintain between airports landing fields, lights and other signal structures radio direction finding facilities, and other structures and facilities excepting air ports, used as aids to navigation.

Chart airways and publish air maps.

Recommend to the Secretary of Agriculture necessary meteorological service.

Collect and disseminate information relative to air commerce and the state of the

Advise with and transfer funds to other executive governmental agencies in research and development of air navigation facilities.

Investigate, record and publish causes of accidents.

Exchange with foreign governments civil air information.

He may apply to civil aircraft to such extent as he deems advisable, the laws and regulations relative to entry and clearance of vessels.

Upon joint order the Secretary of Commerce may take over the airways, and air navigation facilities now under jurisdiction of the Postmaster General (save airports and terminals, which may be transferred to the jurisdiction of municipalities concerned under arrangements subject to approval by the President).

Regulatory Powers

The regulatory power of the Secretary of Commerce consists in making regulations for:

Registration of eligible aircraft.

Rating of such craft for airworthiness.

Examining and rating of the commander, pilot, mechanic or member of the crew engaged in the navigation of registered aircraft and the person in charge of inspection, overhaul or repair thereof.

Examination and rating of air navigation facilities available for the use of registered

aircraft as to their suitability for such use.

He has also authority to:

Establish air traffic rules.

Provide for issuance, expiration and suspension or revocation of certificates deemed necessary to carry out the act.

Relationship of Government Agencies

The Act also makes provisions for the entrance into civil aeronautics of other branches of the government,

The President, and the several States, may set apart and protect airspace reservations for defense, public safety, or other governmental purposes.

At Government airports or intermediate landing fields the departmental head may provide for the sale of fuel, oil, equipment, supplies, service, shelter, and other assistance in emergencies at fair market value.

Government air navigation facilities may be made available for public use by the head of the proper department or agency.

The Weather Bureau of the Department of Agriculture will furnish weather reports, forecasts, warnings and advice generally for the promotion and safety of air navigation with particular reference to established civil airways.

The Secretary of the Treasury may designate ports of entry for aircraft, detail customs men and by regulations apply laws relating to customs and public health.

The Secretary of Labor may designate ports of entry for air immigrant aliens, detail men and apply immigration laws. . . .

(Continued on next page)

#### Forcian Aircraft

Aircraft of the armed forces of a foreign country can navigate only upon an authorization order of the Secretary of State. The civil aircraft of a foreign country may navigate, except in interstate or intrastate commerce, when there is reciprocity between the countries.

#### Existing Laws

Navigation and shipping laws of the United States, including any definition of "vessel" or "vehicle" found therein, including the rules for the prevention of collisions, will not be construed to apply to seaplanes or other aircraft or to the navigation of vessels in relation to seaplanes or other aircraft.

#### Penalties

A penalty of \$500, which may be mitigated by the Secretary of Commerce, is imposed for engaging in interstate or foreign air commerce without a certificate of registration, or navigating registered aircraft without a certificate of airworthiness or in violation thereof, or serving as an airman of registered aircraft without a certificate or in violation of the terms of the certificate, or navigating otherwise than in conformity with the air traffic rules or the Executive orders regulating airspace reservations. . . .

#### AIDS TO NAVIGATION

Beyond question the first aid to air navigation must be the extension to the air pilot of relatively the same help as furnished pilots on the seas. First is the lighting of the airways. Next comes the weather communication system between at least those stations at which aircraft alight; then the radio beacons, the radio markers, and the radio telephones for direct communications with the pilot in flight to apprise him of conditions ahead along the route.

#### Lights

Of the 9,475 miles of airways now in operation or proposed for the near future, 2,041 miles of the Transcontinental are already lighted. For the calendar year 1926 it is proposed to light approximately 1,287 miles of the remaining 7,434 miles of unlighted airways. . . .

The lighting program for the calendar year 1926 promises installation of 24-inch revolving searchlights at intervals of 10 miles along those portions only of existing routes on which the present schedule demands flying in the dark of early morning and evening. The only exception to this 10-mile program will be the ends of each route and intermediate airports.

The first light will be placed at 20 miles from the terminal and second light at 40 miles; thereafter at 10-mile intervals. In the center 10 miles of each of these 20-mile intervals there will be placed four gas blinkers. This combination near the terminals will offer an opportunity for comparison in various weathers. Another consideration which suggests the reduction of the number of electric lights is the fact that the illumination of a city is visible at a considerable distance. At the intermediate airport cities the standard lights are being placed at 10 miles either side, skipping the airport itself.

Wherever the lights are close to power lines they will be operated by local current. Where the latter is not available the lights will be run by farm-lighting sets in charge of caretakers on whole or part time. . . . .

#### Radio Beacons and Phones

It is planned to install in the next fiscal year the directive radio beacon with towers and the smaller radio marker beacons, if the College Park demonstration set proves these are advisable as additional aids.

Generally, the radio beacon towers will be located at 200-mile intervals along the airways at the airports, probably, sending along the airway behind and ahead a "beam"probably a never-ending series of dashes, heard by the pilot as he drives. Off the course to the right, the pilot finds the dashes changed to dash and dot, the letter "N" in Morse, and he heads his craft until he hears again the steady dash. Off the course to the left he hears dot and dash, and "A" and he corrects his course accordingly. Above the clouds or in fog, by night or day, there is this aural guide to the next landing or to destination. In between these great radio beacons, on the intermediate fields every 30 miles or so, will be little automatic radio "markers" transmitting signals to tell the pilot his progress along the route.

At intervals of approximately 100 miles will be radio telephone transmitting sets for communication to the pilot. It is proposed to give him those changes in weather conditions ahead which have occurred since he left his last port, proximity of other aircraft, and perhaps other information.

It will enable him to receive information as to fog and other conditions at the airport ahead while he is above preparing to land, perhaps over the fog or in the clouds and at night.

The airplane receiving sets necessary for the reception of these radio beacon and telephone messages will be simple and comparatively inexpensive. In the future there may be expected an airplane transmitting set enabling the pilot to ask for his location, if lost, or to telephone to points on the ground or to other craft in flight. In this connection the Army and the Navy have done extensive pioneer work, which will be of the utmost value in the adaptation of radio to the needs of the civil airway.

#### Status of Installation

Contracts have been let for 24-inch revolving lights, towers, generating sets, wind cones and other equipment.

Survey pilots have started or completed surveys on the seven routes being partially lighted. These survey pilots fly the routes, locate sites for the 24-inch lights and for the boundary lighted intermediate fields.

#### Weather Service

The most important information which will soon be given the pilot will be that concerning the weather.

Under the Air Commerce Act the Weather Bureau will establish in 1926 twenty-two new "upper air" stations along the airways, with trained personnel at the fields, where practicable; and this number will be increased in succeeding years. By telephone or telegraph it is the intention to furnish

air pilots current weather information, not only of general conditions, and those in sections of the country flown over, but in many cases also immediate forecasts down through the ensuing 4 or 5 hours.

The present and immediately proposed airways and the Transcontinental Government lines are being served this year by a net of 50 Weather Bureau offices (regular) and 27 Weather Bureau and 1 Signal Corps upper air stations, distributed along the airways now in operation or to be established by the end of the year.

In addition to the Signal Corps station mentioned above serving the airway on which it lies, there are 19 other Signal Corps upper air stations and 7 Navy stations. Cooperation with these may be possible when proposed airways touch cities at or near which these stations are located. . . .

Acting under the new law, the regular Weather Bureau offices will supply usual and special telephonic or telegraphic forecasts and warnings to the airport offices in their respective cities. . . .

In additional to the information furnished by the Weather Bureau, special reports will be available from caretakers, as intermediate fields are installed. These will be connected by telephone to the outside world and can furnish regularly, or when specially called upon, information as to conditions along the airways between these points served directly by the Weather Bureau. They may also be called upon to signal pilots to land in the event of sudden storm warnings received after departure from his last station. These intermediate fields will provide means for reporting conditions or other information or halting traffic throughout the air transport system.

Operation of the Weather Bureau Service
The transmission of weather reports by
the Weather Bureau will be by priority telegraph or telephone service.

Where there is an upper air office at an airport, the upper air and flying weather reports will be forwarded by the upper air observer working in conjunction with the local airport and Weather Bureau offices, either to adjacent airport office where it may be required, at times sufficiently prior to departure of planes. (Example—Kansas City will transmit upper air and flying weather to Wichita or Moline, as necessary.)

Where there is a regular Weather Bureau office and no upper air office at an airport, the regular Weather Bureau Office, in conjunction with the local airport office, will upon request forward a report of local flying weather conditions to either adjacent airport, where required, at times sufficiently prior to departure of planes. (Example—Hartford Weather Bureau office will transmit flying weather to Boston or Hadley Field as necessary.)

When weather observations are taken at special places, such as intermediate fields where there is neither a regular Weather Bureau office nor upper air observer, the special observer, who may be the caretaker, will upon request forward the flying weather report to either adjacent airport, as required,

at times sufficiently prior to the departure of planes. (Example—Tejon Pass will be asked for weather report by Los Angeles.)

The upper air reports will give direction and velocity of winds above the surface, velocity and direction each change of direction of the wind; the maximum altitude to be that generally flown on the airway, and forecast 1f any.

The foregoing statements do not include the Transcontinental as that route is covered by the radio service operated by the Government. . . .

#### REGULATIONS

The regulations provided for in the Air Commerce Act are in process of study and preparation by the department, aided by conferences. In these, the department is laving the advice and aid of every expert any phase of the aeronautic industry and art provides. It is probable that all of these regulations will be promulgated near the close of the year.

#### AIRPORTS

With the expansion of civil aeronautics, an airport will be a prime necessity for every large city. In the same manner that steamships readily put into good harbors, air traffic will be drawn to cities having carefully designed airports.

Commercial value, however, is not the only consideration. The airport is as much a recreation center as the parks, golf courses, equestrian trails, etc.. and should, therefore, be considered as a municipal enterprise.

In fact, the Air Commerce Act recognizes this by providing that airports shall not be owned or operated by the Federal authorities and that no exclusive rights be granted for the use of any civil airway, airport or other navigation aid owned by the United States.

The airport should, naturally, be as large as possible, easy of approach from four directions. and reached by all methods of ordinary transportation.

Obviously, it should provide all facilities necessary to aircraft operation. It should be planned to care for future rapid increases in aeronautics. At first, the municipal sheds will probably be available for housing private planes and air transport planes, and these can be serviced at the airport. Later, with heavy traffic, the airport will become simply a place for taking on and discharging passengers, mail and baggage, similar to a union railroad station. After unloading planes will be flown to a larger field, somewhere on the outskirts of the city, where they will be serviced and held until ready for return trips. . . .

General information on the construction and equipment of airports has been prepared by the department for distribution.

#### ESTABLISHMENT OF AIRWAYS

The establishment of any airway obviously depends upon the necessity therefor. This considers the time saved by air, the assurance of enough business (mail, express, passengers) reasonably to support operation.

Airways must naturally follow first the flow of principal lines of business. As these airways develop, there will doubtless be "feeder" airways from communities of lesser importance.

The first advantage of an airway, perhaps, is the advancing of mail, and the selection of a route for such a purpose naturally comes within the scope of the Postmaster General.

Past experience indicates that air mail alone is insufficient to support such service. With night flying made possible and extension of existing routes, the whole advantage of the airplane will be available and it should be expected that with the public realization of the air mail value full and paying loads will be forthcoming.

The Department of Commerce also has a prime interest in new airways. It cannot be expected to designate an airway or provide air navigation aids until a survey indicates the warranted demand.

Much of the advantage of the airplane is lost when the routes are flown in daylight hours only and the cost of lighting an airway is so great that here again the permanancy of any proposed route must be carefully considered. It is not sufficient merely to select a line of cities and proclaim an airway.

As flying increases in volume the airways will be flown by private owners and by operators of various kinds of air services, such as special trips, photographers, news agencies etc. These will, too, need the same navigation aids as the transport operators, and such flying will, also, follow the flow of trade.



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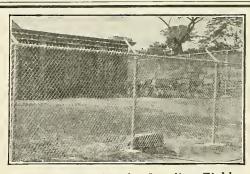
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#### RICKENBACKER ENGINE IS TEST-FLOWN

(Continued from page 294)

aluminum gear case, for instance, attached to the rear of the crankcase, supports the cam ring and the oil pump as well as gears for driving same. The gear case may be removed and replaced without affecting the valve timing in the least; therefore, when the engine has once been timed there need be no fear of getting it out of adjustment during the inspection or while making repairs. The striking feature of this design is the single ring of three cams which operates all ten valves.

Each cylinder has two spark plugs. There are two five-cylinder, high-tension magnetos. The magnetos work independently; one firing the forward spark plugs and the other the rear plugs—in all cylinders—hence there is small possibility of a forced landing due to ignition failure.

Glenn D. Angle, who is chief engineer of the Detroit Engine Works, Syndicate, is well known to the aircraft industry. He was engine designer for the Curtiss Aeroplane & Motor Co., Buffalo, during 1916 and 1917. For the next seven years he was in charge of airplane engine design, Engineering Division, Air Service, McCook Field, Dayton, Ohio

He assisted in the design of the Curtiss K-6 and K-12 engines and supervised the design of the Universal Test Engine Model W-1-A (800 horsepower) and the W-2 (1,000 horsepower) engines. Mr. Angle is a recognized authority on this science and is the author of two widely consulted works—"Airplane Engine Encyclopedia" and "Engine Dynamics and Crankshaft Design."

This motor represents the expenditure of seven years of study, work and money on the part of Captain Rickenbacker, whose cherished ambition has always been to serve in commercial aviation.



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#### NATIONAL AIR RACE RESULTS

(Continued from page 287)

minutes 14.64 seconds, carrying a load of 1,650 pounds. His efficiency points were 896.

Louis G. Meister, in the Buhl-Verville "Airster" was second—speed 119.987 m. p. h.; efficiency, 624 points; prize, \$500. R. W. Schroeder, in the Ford tri-motored (Wright Whirlwinds), won third—speed, 114.262 m. p. h.; efficiency points, 427; prize, \$200. James G. Ray, in a Pitcairn Fleetwing, Curtiss C-6 engine, fourth—speed, 103.465 m. p. h; efficiency points, 736. He took second place in efficiency and a cash prize of \$300.

The Kansas City Rotary Club Trophy race for military pursuit ships took the place of the Pulitzer race. It was won by Lieutenant G. T. Cuddihy, U. S. N., in a Boeing FB-3, Packard 600 h. p. 2A-1500 engine. His average speed was 180.49 m. p. h.; time, 39 minutes 53 seconds—an excellent record for pursuit planes over a closed course. Lieutenant L. G. Elliott, A. C., (Curtiss P-2, Curtiss 500 h. p. V-1400 engine) was a close second with a speed of 178,609 m. p. h.; time, 40 minutes, 18 seconds. Captain Ross Hoyt, A. C., (Curtiss P-2) third—speed, 170,909 m. p. h.; time, 42 minutes, 7 seconds. Lieutenant C. C. Nutt, A. C., (Curtiss P-2) fourth—170,759 m. p. h. Lieutenant H. T. McCormick, A. C., (Curtiss P-2) fifth— 169.588 m. p. h. Lieutenant H. D. Barnes, U. S. N., (Curtiss F6C-1) sixth—163.574 m. p. h. Lieutenant L. M. Sanderson, M. C., (Boeing FB-3) seventh-163.364 m, p. h, Lieutenant A. B. Ballard, A. C., (Curtiss P-1) eighth—159.255 m. p. h. Individual trophy awards were given.

Two interesting planes were disqualified because the pilots failed to round the pylon properly. The Wright Apache powered with an air-cooled Pratt & Whitney engine, piloted by C. C. Champion, U. S. N., and a Curtiss P1 powered with a 400 h. p. inverted air-cooled Liberty engine, piloted by Lieutenant Crumrine, A. C.

SUNDAY, SEPTEMBER 12—RACES FOR THE BENJAMIN FRANKLIN TROPHY, DAYTON DAILY NEWS LIGHT AIRPLANE AND SCIENTIFIC AMERICAN TROPHIES

The following events postponed on Tuesday were held on Sunday. The Benjamin Franklin Trophy race, a novelty relay race, was won by Basil Rowe and his team, Casey Jones and A. H. Kreider, which averaged a speed of 118.62 m. p. h. \$500 in cash prizes were included with the trophy. Second place was won by the Ludington team—Robert P. Hewitt, John Thropp and Douglas Davis,—prize, \$300. Third place went to the Pitcairn team—James Ray, A. C. Kerr and H. W. Rafus,—prize, \$200.

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Three winners in the model contest—B. Pond (M8), J. J. Lucas (29), and Loughner (Detroit)

was won by E. B. Heath, in the Heath Sport monoplane, who covered the 50 miles at a speed of 86.45 m. p. h. \$750 in prize money went with the trophy. Jack Laass in the Driggs Dart made second, \$400, with a speed of 82.76 m. p. h. Third place, \$200, was won by A. H. Kreider in the KRA monoplane; speed, 76.77 m. p. h.

In the sport plane race for the Scientific American trophy, A. H. Kreider in the KRA light plane, won first place and \$750; speed, 94.493 m. p. h. E. B. Heath, in the Heath Sport, second, \$500-94.493 m. p. h. C. D. Chamberlain in a Bellanca biplane, with a 3-cylinder Lawrance engine, third, \$150—speed, 89.342 m. p. h. Jack Laass in the Driggs Dart, fourth, \$100—speed, 85.38, m. p. h.

Three Marine flyers in Boeing Pursuits gave exhibitions of stunting to keep the spectators interested in the long intervals between races.

#### ITALY'S CIVIL AVIATION

(Continued from page 283)

Lemnos Island. Modern seaplane stations have been constructed by this company at Athens and Constantinople for the benefit of this line.

It is worthy of note that while the "Aero Espressa Italiana" uses S.55 flying boats built by the "Savoia", which has a very limited interest in the company, the "S. I. S. A." and the "S. A. N. A." have equipped their fleet with machines built by the industrial groups on which they depend. For instance, the S. I. S. A. is an affiliation of the Cosulich Company, which owns the shipping company of that name, and the Cantiere Navale Triestino, where, in addition to the big ships for the Italian maritime service, the Cant. 6 ter flying boats are built for the Turin-Trieste line. The S. A. N. A., on the other hand, is associated with the "Societa Piaggio & Odero" of Genoa —an important firm of shipbuilders and aircraft manufacturers who control the factories of Marina di Pisa and Pontedera where, under license, the Bristol Jupiters and the Dornier Wals are built.

From the above it will be seen how there is a tendency in Italy to concede the exploitation of air services to the companies who can build their own machines. On the other hand, the Aero Espressa Italiana is financed by an important bank which gives it a certain economic power-

Of the 35,000,000 Lire (\$1,305,500) set aside in this

(Concluded on page 334)

#### BEST ALL PURPOSE PLANE AT LOW PRICE

Slightly used JN4D, \$600. New JN and new OX5 motor, knocked down, \$725. New JN4D, set up, test flown, \$790.

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Propellers for OX5, tipped, \$17.50. Propellers for Hisso, untipped, \$17.50, tipped \$30. Rome Turney radiator, \$22.50. Repaired tested Hisso radiator, \$30. Wings for Standard, JN, Canuck and Thomas Morse Scouts. Tape of all kinds needed in covering wings; fabric, dope, wire and instruments. Bethlebem Spark plugs 15c. Adjustable wire hose clamps, \$1 per hundred.

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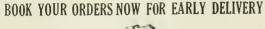
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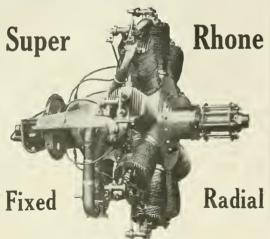
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WOODSON ENGINEERING COMPANY BRYAN OHIO Concluded from page 333)

year's Air Estimate for Civil Aviation, 30,000,000 (\$1,-119,000) are to be used for the Trieste-Turin, Genoa-Palermo, Rome-Brindisi and Brindisi-Constantinople lines, while the remaining 5,000,000 (\$186,500) will be spent on experimental lines.

The form of subsidy adopted by the Italian Government resembles that of the other European nations, and is also based on the mileage covered. This is arrived at by halving the actual mileage cost of the service. But Government help takes other forms and includes such facilities as exoneration from paying taxes, free use of meteorological services and military air harbors, mail subsidies and contributions towards expenses of plant. For instance, a subsidy of It.L.11,44 (.43 cents) per kilometer has been granted to the S. I. S. A., as well as a mail subsidy of It. L. 500,000 (\$96,000) per year for ten years. To the S. A. N. A. and the Aero Espressa Italiana has been granted a greater kilometric and mail subsidy, as well as an annual contribution of It. L. 800,000 (\$154,400) towards the cost of plant expenses, for the same period of time.

With this active support of the Italian Government, civil aviation shows every sign of development, and there is every prospect of its exercising an important influence on international aviation as its privileged geographic position warrants.

#### DOWN TO THE EARTH IN 'CHUTES

(Concluded from page 281)

sult of a near fatality, we were forced to cast about for a safer method of getting the student off on his first leap. The lift-off from the upper wing was the solution.

Our engineers figured that the wing of a DH would support the weight of a man's body at the take-off without undue danger. For the first jump of this type I had no platform to protect the fabric. A rope was stretched along the leading edge of the upper wing and to this rope another was tied in a place directly in front of where I was to take my position. This was to give me added support after rising to my feet as about to leave the plane. Lieut. Harry Weddington piloted the ship.

San Antonio newspapers had been none too optimistic as to the outcome of the stunt and as a result a large crowd were assembled at Kelly Field when we were ready to take off for this first lift-off. The only bad moment we had was as the plane was reaching flying speed and we were cutting along the top of the grass. Weddington could not tell how much extra aileron it would take to overcome my added weight and as a result over-controlled and almost rolled me off the wing. This was overcome in an instant and for the rest of the trip we maintained an even keel. It was most pleasant riding on the wing away from the slipstream.

Another plane was flying only fifty feet away with a newsreel cameraman aboard to get the pictures. As we reached 3000 feet I arose to my feet and Weddington put the plane into a sideslip so as to assure my clearing the tail surfaces with my chute and body. Giving the rip cord a jerk I found my chute lifting me off and the next instant I was on the way down to the field. After this experiment we adopted the lift-off method for all our students. We found that with two men on the upper wings the plane balanced perfectly and was easy to handle. The chance that a student would "freeze" onto his rip cord and neglect to open the chute was eliminated. So it was through another mishap that we found the safest way to put the novice into the air for his first leap. Just

the propeller.

prior to my experiment a student had "frozen" after leaving the step and after falling 500 feet his chute had opened as a result of his left hand having the rip cord in a death grip and as his body began to spin in the fall, the centrifugal force had flung his arm away from his trunk and torn the pack open.

My most thrilling experience while in parachute work came one afternoon at Chanute Field at Rantoul, Illinois. Lieut. Hamilton, former holder of the world's parachute altitude record, was riding the other wing with me and we were merely making a practice jump. He was wearing standard training chutes and I was equipped with the newly perfected seat pack. Hamilton got away in good shape and as I reached for my rip cord ring to open my own chute we hit a bump in the air which threw my wing up several feet and pitched me off forward toward

In that short instant I pictured in my mind the results to the plane, pilot and myself should my body hit that whirring prop. I also saw the result that would follow should I open my chute and become entangled in the tail surfaces. I had been thrown well toward the engine. Having made about two hundred jumps with Weddington always piloting the plane I figured that he would sense the danger and do the only thing left to do-give the ship hard right rudder and drive the tail away over to the left. This would allow me to open my chute from where I was falling without so much danger of striking the tail. All these thoughts flashed through my mind in a fraction of a second. Confidence in my pilot enabled me to take the chance of opening the chute which I did. The chute cleared the fuselage and tail surfaces by inches and my body at the end of the shroud lines flew by Weddington so closely that I could have touched him. As I cleared the horizontal stabilizer my elbow struck it a glancing blow. We all came out of this tight situation with no one on the ground realizing at any time the predicament we were in. Had I been equipped with the larger training chutes such as Hamilton wore on the other wing this might not have been written.

Almost every time we made a parachute jump we learned something new which we could pass on to new students and which added to their 'safety. When an emergency arises, to have had the experience of a jump under ideal conditions behind one is of inestimable value and very few of our pilots are without this training.

#### AIR-HOT AND OTHERWISE

(Continued from page 279)

to the N. A. A. records submitted by the Washington headquarters, and actually sworn to—by heck, what a thrill some one in the refuge of Retired Old Ladies must have had to have been asked to "swear"—after four years of existence, the Paterson, N. J. Chapter had 10 members, previous to the manifesto issued that Mitchell must be beaten. Ten who paid their yearly dues. On September 7th, the tally sheet given out at the Convention, under the heading New Jersey, showed a new chapter had been formed known as the Wright Aeronautical with 120 members, giving them 6 voting delegates.

In Long Island City, the home of the Chance Vought Corporation, a chapter was formed with 117 members, giv-

ing them 6 delegates.

And, lo and behold, even a Loening Chapter sprang into existence in New York with 92 members and 5 voting delegates. You are possibly aware that the Loening outfit has had one or more naval contracts.

(Continued on page 336)

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(Continued from page 335)

Three hundred and twenty-nine members—\$5,00 each—\$1,645. Who paid it? The employees who joined? No, no, you are mistaken. On August 27th a few days after the daily press carried the Mitchell announcement, one of the manufacturers posted the following sign in his plant:

"In order to encourage the development of commercial aviation and stimulate interest in the new science of aeronautics, this company contemplates to assist the X. A. A. drive for increased membership by presenting to those of its employees who will express their consent a free of charge membership for one year.

"This does not carry any obligation but will be found of value because of the information and bulletins which will be received from the X. A. A. It is requested that those employees who do not desire to become members of the N. A. A. would leave their names in this office."

That their activities in suddenly springing into violent action in an organization which they hitherto had utterly ignored was spurred on by the Navy partisans is certain.

The X. A. A. had been in existence for four years, driving for new membership, but during these four years no consideration has been given to it by any of these firms, and in the past two years, the heads of them never once attended a meeting—the writer knows this for he has been present at every one.

This showed whether or not there was really magic in the name of General Mitchell and the idea that he might head the N. A. A. In these new chapters stirred into being 10 days after the Mitchell announcement there were 329 which gave them 17 delegates to the Convention. It was truly beautiful team work. If the bosses of the N. A. A. would study aeronautical fighting tactics as they have studied those of controlling a convention, we would be invincible in the air.

Now how could these delegates be seated? The by-laws are plain and state how the selection should be made. By-laws be damned! Push them aside. So at the first meeting of the Board of Governors on September 6th, a resolution was adopted, allowing the number of delegates to be based on the membership of the Association 10 days previous to the Convention and the Credential Committee accepted the credentials of the delegates on this basis.

At previous conventions as at every other meeting of like nature in all history, the delegates assembled have had the right to elect as chairman that man whose name and personality they favored for the job. Not so in this cut and dried procedure. The retiring president, as the Sacred Worshipper of the Navy, waved a fin in the air and summarily appointed both the chairman and the secretary. Even the prepaid delegates, you see, if permitted to do any thinking, might have done something contrary to Navy regulations

This sets a precedent in parliamentary law, but what is parliamentary law or by-laws to Uncle Sam's rockingchair sea fighters?

The lubrication system of the suddenly conceived machine was in far better order than that of their antiquated battleships. It worked the first time power was turned on without a single leak. The machine in the Bellevue-Stratford was greased beyond all precedent and when the nominating committee named Glenn L. Martin of The Glenn L. Martin Company, who has been given by the Blue Uniformed Gods millions of good Navy contracts, he naturally leaped into the chair with an uncanny speed.

A candidate forthwith was named for president whose full possession of all the brilliant characteristics of the retiring chief is too well known to be commented upon here. It made you think of swab the decks drill when our gallant fleet is lying intrepidly at anchor, fearing no foe in all the world, in the terrific waters of the Brooklyn Navy Yard and for which the taxpayers pay about three hundred

and sixty million per year.

Splice the main brace, gallant seamen of the air and airmen of the Washington Departments! Three cheers for Porter Adams! The same Porter Adams who was "mentioned" but not loud enough for President Coolidge to hear or appoint to one of the Air Secretaryships—it didn't matter which one. Great heavens, airmen, he is even the identical and selfsame Porter Adams who during the past year has acted as the assistant in the Washington headquarters of the Naval Aid Auxiliary—I mean the N. A. A.—and as such has accomplished as great a public service as can be represented only by the use of a peeled capital O.

"By their fruits ye shall know them," said a Book greater than the Book of Naval Tactics. We have had two years of Naval management of the N. A. A. The fruits? What are they? Only soft places for the favored few are found in evidence. More chapters and less members. Much money has been spent, much talk talked and much politics

played with a result which is invisible.

It was a typical Navy victory—a victory of wirepulling—the sort of victory which would stir the foreign officers of European Governments who are in search for diplomatic strategists to take advantage of the other fellow when he isn't looking. To me it became obvious that it was useless to try further to inject life into this naval corpse. It is now a job for the undertaker and the grave digger. It was as clear as if it had run up the naval flag that the N. A. A. was naval and not aeronautical.

It is the policy of this magazine to promote the interests of aeronautics. The Navy has its organs, conceived and operated for its propaganda purposes, but of them Aero Digest is not one. Our object is the promotion of the best interests of the industry and the best interests of the nation as a whole, which are synonymous therewith. We are not, never have been, and do not propose to be the organ of any government bureau, department, service or organization.

We are in opposition to nobody who is working for American aeronautical interests, but if we chance to find someone who isn't doing that, we shall continue to do some hammering. We regret the job, but will accept it as we must accept the other disagreeabilities of life.

#### A NOD AND A WINK

(Continued from page 289)

last as a wild and Wehrle wilderness where a different class of snipe-shooters plied their trade. No taxi driver had any idea that the place existed, and there were no signs along the road to guide him. On our first trip the driver suggested that we take emergency rations; and when we finally discovered the field he urged that we turn back to procure collapsible life boats. But while there was running and standing water all over the field, there was none where it was most needed. The sanitary disarrangements would have been condemned even by a gathering of Hottentots, even though they lay no claim to the esthetic culture of an air race official. Will future race officials please remember that certain advances in sanitation have been made since the Stone Age? And in the interests of decency and public health will they not endeavor to take advantage of those improvements, even at the cost of a little money?

With all these handicaps it is not surprising that Phila-(Continued on page 338)



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(Continued from page 337)

delphia citizens and visitors preferred to attend the tennis championships and the bathing beauty contests at Atlantic City. I don't see why the bathing beauties weren't brought to the races. There was more water on the field than there was at Atlantic City. They could have splashed about to their hearts' content in the Wehrle Waterworks. Trudy Ederle said if only they had a tug out there she'd think she was back in the English Channel.

In contrast to this wretched mismanagement was the work of the pilots, the one bright note. And it was a shame that pilots and flying enthusiasts, some of whom had come all the way from the Pacific Coast, were dumped down in such conditions and forced to endure hours of monotony between the two or three races a day doled out to them by a nit-witted management. Men like Bill Long of Texas, Hoyt and Waterman of California, Beech and Cessna of Kansas spent time and money to go there and be chloroformed, which is very regrettable as the races could have been managed properly to make their trip worth

By far the best part of the races were the various indoor social gatherings in the evenings when the flame of life that had perhaps been flickering feebly all day flared up in amazing brilliance. Gentlemen who had been glum and silent since the drab moment when they had stared with loathing into the impassive countenance of the morning fried egg suddenly became instinct with life and explained happily that what had disagreed with them was the salmon of last night and not by any chance the Scotch. Other gentlemen who had shuddered every time they passed a hot-dog stand now emerged from their dietary retirement and tackled a filet mignon. All was gin and glitter and the world a most entrancing place.

The Pen and Pencil Club of Philadelphia gave a supper and smoker at which General William Mitchell was the star attraction. Mr. James A. Campbell, president of the club and dean of Pennsylvania newspapermen, a man in his seventies, was a delightful and inspiring host. A few naval officers, disguised in detectives' whiskers and spectacles, were there to keep an eye on the General and see that he didn't slip out and sink a battleship while the General Staff were home in bed.

One of my merriest evenings was spent at a gathering of the Quiet Birdmen, presided over by Bruno and Blythe, publicity experts, who won fame by entertaining Gloria Swanson's party. The fair Gloria opened the races by firing a gun and one of her press agents, and appeared at the field accompanied by Mayor Kendrick and Bruno and Blythe, much to the chagrin of air race press agents who would have preferred to see these two in permanent seclusion somewhere, preferably Sing Sing. Blythe had decked himself out in new hat, cane, yellow gloves and spats, and was immediately mistaken for the Count de la Falaise and so forth that Gloria had picked up on her travels abroad, along with a Pekingese poodle. Blythe and the Count made a very handsome pair, while Bruno and poodle also were applauded by the crowd, who mistook the poodle for one of the air race officials.

Well, these two staged the Birdmen's dinner. By eight o'clock there were only six of us there-and dinner had been ordered for fifty! If no more appeared, the unfortunate six would have to pay for fifty dinners. Old man Gloom immediately took the chair, and pointed out that the heavy rains had caused the light attendance. This was enlightening but not cheering. And then arrived the official bootlegger with twelve quarts. Two quarts were procured and we proceeded to drown our sorrows. But no human nature justified.

liquor has yet been distilled that can make me laugh gaily when faced with the drear prospect of paying my share of fifty dinners of which I cannot possibly eat more than two. Finally the rain stopped, and the clan poured in to be greeted with heartfelt cheers. There was a great shout when Captain Wilkins and Major Lanphier were announced, and absolutely a roar when it was noticed that the Captain had shaved off his whiskers. Why he wore whiskers had been a mystery to me until that moment. Now the mystery is why he shaved them off. I asked him why he and the Major had gone up to Point Barrow anyhow, and he said it was to discover what effect the arctic currents had on the price of ham in the Sandwich Islands. This is the most sensible reason yet advanced for the polar expeditions, and as it comes from Wilkins himself it may be regarded as authentic. (Associated Press

Meanwhile the hopeful bootlegger sat at a side table with his wares prominently displayed, waiting patiently for the missing guests so he could dispose of his stock. There he sat, his face lighting up with a smile as each possible customer came in. The dinner got under way like a slow freight, but as more and more arrived it smoked up and dashed into clear with the abandon of the Twentieth Century Limited and went roaring along merrily, while the bootlegger's spirits rose in direct ratio to the sinking of his liquor. He left that dinner a happier man, his faith in

Other fine parties were staged by Luke Christopher of the Huff Daland Company, by Henry Wacker of Goodrich, and by Elliott Springs, the American Ace and writer. Canada Dry was served. Now, I don't care a snap for ginger ale as a rule, but at these parties I can sit drinking it until 5:30 a. m., singing and shouting and having a whale of a good time. It must be the cracked ice they put in it. Or it may be the jolly good crowd. At the various parties we had General Mitchell and Eddie Rickenbacker, Gertrude Ederle and Dudley Field Malone, Casey and Mrs. Jones, Bill Arthur and Jack Whitbeck, Major Pirie and Captain Oldfield, Elliott's beautiful wife with whom I sometimes quarrel, and my own with whom I'm afraid to quarrel. We also had most of the house detectives in at various times. I believe that they were watching Wacker.

Now that I'm home again by the Palisades of the Hudson and am beginning to recover my appetite for a solid instead of a liquid diet, I can think of a crying need indicated by these races. I respectfully ask our great mechanical geniuses, Mr. Henry Ford and his son Edsel, to concentrate upon the invention of a good, cheap zinc or tin stomach-lining for the proletariat; something that may be used at air races until it gets corroded, when we may throw it away and buy a new one for a reasonable price, or else, if it isn't too far gone, procure genuine Ford repair parts from any authorized dealer.

When I left home I was a well-preserved old gentleman, hale and hearty, carrying my years lightly. But I returned a broken old man, so obviously doddering and feeble-minded that a subway guard addressed me as Senator. I suspect that the bootleggers didn't remove all of the poison that a thoughtful government with my welfare in mind had put into my schnapps. For we are approaching a time in our national affairs when the Statue of Liberty may be supplanted by one to Lucrezia Borgia. But this tin lining must be invented soon if we are to continue attending air races and remain alive, and if government of the People by the Poisoners for the Prohibitionists is not to perish from the earth.



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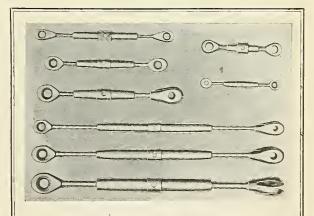
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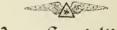
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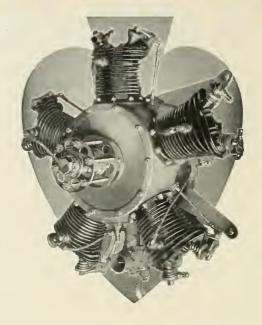


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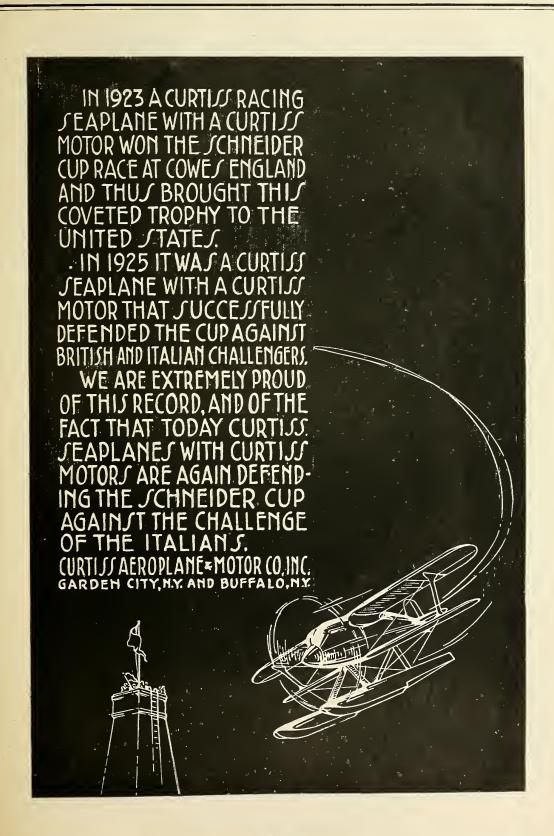
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# "AH, THERE, BILL!-HOWDY!"

HEN the young lady editor of Aero Digest asked me to leave my two-by-four mansion here in Suckerville-on-the-

Cy Caldwell Confers With Secretary MacCracken

Subway and go to Washington to attend an air regulations conference I laid aside The Evening Pornographic and filled my pen with red ink, for, frankly, I expected to report the proceedings as a total loss, with no insurance. Of course, I had heard favorable accounts of this man William P. MacCracken, Jr., whose ancestors left Scotland and changed their diet of oatmeal porridge and Scotch whisky for corn flakes and orangeade, the stuff that has made this

country what it is today, whatever it is, in the present year of Lord the Anti-Saloon League. MacCracken was said to be a good scout. But when President Coolidge appointed him Assistant Secretary of Commerce for Aeronautics, I was afraid the man had been ruined. Hundreds of good men have received political appointments, and never have been worth a damn afterwards. Something in the air of Washington gets into them and rusts their works. So I expected to find this Mac-Cracken laddie considerably deteriorated. But I am glad to report to my six readers that corrosion has not yet set in, and that he is drafting the regulations calmly, carefully, and sensibly, unaffected by political hokum, Navy narcotics, and general axegrinding. He's listening to

cverybody, sorting the sane from the silly, and generally doing quite as well as any mere human being could do on a job in which nobody but an Angel of the Lord could please everybody—if even an angel could, which I doubt.

In his work Mr. MacCracken has had lots of help. Everybody with railroad fare and an idea has been in to see him; and those without the fare came by freight. I'll' name a few who have crawled in at the various conferences, and you can figure out for yourself those the roads made a profit on and those who arrived in coal gondolas. I went by Pennsylvania, and had a whole train of fiftyseven cars all to myself. Queen Marie had nothing on me with her special. And I didn't pay a dollar for mine, either.

My private car was named, "Automobiles—End Doors." Ordinarily I'm a pretty democratic sort of fellow, and don't think anything of traveling right in with the vulgar herd in the parlor car, but with all this royal exclusiveness we've been subjected to lately it occurred to me that I better get a private train of my own and also a whole floor of the Washington Hotel for myself and suite. The floors were all taken so I took the roof, where I was quite as warm as the Roumanian peasants.

Well, among those who arrived by special trains and what not—mostly what not—to confer with Brother Mac-Cracken was the golden-haired Dick Depew of Fairchild Aviation, I. M. Ladden and W. G. Lockwood of the Engineering Division of the Army Air Corps, Lieut. E. P. Page, J. B. Johnson, J. M. Keddon, and McD. Kintz.



William P. MacCracken, Jr., Assistant Secretary of Commerce for Aeronautics.

Also arrived H. G. McCarroll of Detroit and Bill Stout, the world's greatest salesman, who could sell an icicle to an Eskimo, judging by the

past—Ah, Bill? Then, to the sound of trumpets without, the worthy Herr Noorduyn of Atlantic Aircraft, accompanied by a halberdier, Halbert E. Payne, forsooth. Also Charlie Lawrance and E. T. Jones of Wright Aeronautical, Tom Huff of Huff-Daland, T. M. Simpson of Continental Motors, J. A. McInaney of Alexander Aircraft, Professor Klemin of New York University, and C. J. Buckner of Waco fame. (This is beginning to read like a Biblical

genealogy chapter: "And Jacob begat Ham, and Ham begat Hamburg, and Hamburg begat Indigestion.")

Then there was Chas, Ward Hall-no connection with Hall-Mills case, Lester Seymour of N. A. T., General John F. O'Ryan of Colonial Air Transport, Reed Chambers of Florida Airways, Henry Berliner, who learned so much about helicopters that he now builds airplanes, Lieut. Harold B. Harris and Ervin Auerbach, the bug hunters and boll-weevil fiends of Huff-Daland Dusters who have spread terror among the insect population of the South-this is not a wise crack at the anti-evolutionists of Tennessee; and also the ingenuous E. G. Knapp who distributed a Waco over part of Missouri in the Ford Tour a year ago. (Ah, there, E. G.!) Then

there was Commander Robert D. Kirkpatrick, George Mixter of Stone and Webster, H. R. Horton of P. R. T.—"Under Mitten Management"—and E. R. McReynolds, also ably managed by the ubiquitous Mister Mitten, who is the Transportation King of Philadelphia. He has everything under his management except the baby carriages, and he's after them.

This list is getting to look like a telephone directory of the United States but I can't help it. Let's get on with the sorry task, and don't ever raise your boy to be a reporter. There was Harry Rogers, W. W. C. Howe, Sandy Saltus of Ludington Exhibition Co. and C. Townsend Ludington (in person). Also C. H. Colvin of Pioneer Instrument to whom I once sold a plane which Tom King laid in variegated sections all over Bolling Field, C. V. Pickup to whom I couldn't sell a plane, and Floyd J. Logan, Purveyor of Jennies to Her Majesty the Queen of Roumania and points South. (By the way, are you still with me? Or am I alone?)

The room was packed to the doors with H. D. Harris, Fred R. Golder, Tom Carroll, the able test pilot of the National Advisory Committee, E. W. Robertson—of old Virginny, Suh—Harry E. Kiel, who has a canal named after him in Germany, E. J. Sweeney of Sweeney Aviation School, J. P. Worthington, Capt. Harry C. Draper, Phil Lampert, N. A. T., C. B. D. Collyer, initials and all, of the Skywriting Corp., James C. Edgerton, Frederick A. Shauss, Bill Robertson of (Continued on page 408)



Lieutenant Abe, at left, and the Tokyo-London-Rome flyers are accorded an ovation upon their return to Tokyo.

1 International

# JAPAN'S CIVIL AVIATION

IN an afternoon of mid-August, 1922, passers-by along Fujimicho in the ancient city of Tokyo caught the soft echoes of merry

bursts of laughter floating out of the palace garden of Prince Yamashina. There was a garden party on the lawn—a sort of coming-out party. There was no crash of brass or thunder of orchestral music from the Toyama Military Band there, neither oratory nor dramatic performances. There was a quaint, old-world touch of distinction about the invited guests. For they were the princes and princesses of the blood, one and all.

The fair debutante, for whose honor all this fuss and mirth were made, sat in a corner of the spacious lawn, demure and silent, but polished and sparkling like a silver coin just minted. She had arrived at the Yamashina palace a short time before from England and had just been assembled there under the personal direction of the prince. For the royal party was in honor of perhaps the first airplane in Nippon devoted exclusively for private use and for sport.

That's four years ago. But even then the young Prince was an experienced pilot—quite an ornament to the Naval Air Corps to which he belonged.

And what, pray, was the prince going to do with the thing? To which the Prince replied: "I am going to have as much fun with it By Adachi Kinnosuke as most of you have with your motor cars. I'm going to use it in just about the same way."

To the ears of his princely rela-

tives, that little speech of the young prince sounded about half a century ahead of the age. Four brief years ago that was. The interesting and all important thing about it all is that today that speech does not sound nearly as remote or reckless as it did then. It sounds quite rational—if not entirely commonplace in the Nippon of the year of aerial grace, 1926.

For flying as a sport seems to have precisely the same

sort of magic appeal to the imagination of the Nippon race as the flame to the moth. This single fact throws more light on the mental make-up of the race than the psychological study of a thousand pages. For we are just that sort of people: we fondly, passionately love to see ourselves in the spotlight of daring adventure—gambling high with life and death.

The French Mission of 60 army aviators and air engineers under Colonel Faure, many of whom were officers with distinguished records in the World War, came to Japan in February, 1919, and taught our army aviators for two years. In April, 1921, we had the British mission of 40 aviation experts under Colonel Sempill, who remained for about three years instructing



Japan's royal aviator-Prince Yamashina.

our navy pilots and engineers in the art and practice of flying. These two missions achieved more in laying the foundation of our aviation than all other factors combined. But neither of the missions caused much of a ripple on the popular sentiment of the country toward aviation and the appreciation of its possibilities compared to the American 'round-the-world flyers. Their visit landed upon our men of the street like a ton of phosphorous bombs. They woke them up—literally.

The Comet Flying Club of Sendai has the distinction of being one of the pioneers in introducing and popularizing pleasure flights in Nippon. Last year the club bought an old seaplane from the Naval Air Service at Yokosuka and with it started sightseeing air trips from Sendai to Matsushima, one of the

famous beauty spots of Japan.

Other aviation schools and companies in Nippon have often done the same sort of thing-but always by fits and starts. Mr. Tamotsu Aiba, president of the Nippon Aviation School of Kamata, near Tokyo, which has the training field at Tachikawa, within 20 miles of the heart of Tokyo, told me that his school has carried out many a pleasure trip for sight-seeing passengers, but always at financial loss to the school. The Nippon Air Transport Research Station at Sakai, near the great city of Osaka, has also engaged in pleasure flights but, as with all the rest of the companies, never as a steady business.

One thing which our American friends should never lose sight of in the study of Japanese aviation, more especially of her civilian aviation, is its extreme youth. Only last year it was that Nippon established its first regular air mail. Years before that she had made many trial

flights were attempted until April 20, 1925. On that day the Tokyo and Osaka air mail service was opened, a distance of 425 kilometers (264.08 miles), also, the Osaka-Fukuoka service over 490 kilometers (304.47 miles). Then followed the two services between Mitajiri and Beppu, the famous Japanese Spa of 101 kilometers (62.76 miles), and between Sakai and Taka-



The "Casey Jones" of Japan-Masao Goto.

air mail flights but nothing like steady periodic air mail

Underwood & Underwood.

Japan's Civil Aviator's Club has two women members. Miss Shigena Kibe and Miss Asano Maida (second and third from left) at a recent air meet.

matsu of 125 kilometers (77.67 miles).

On April 1, 1926, there was added to these the Tokyo-Sendai line of 320 kilometers (198.84 miles), and an irregular service between Osaka and Dairen, Manchuria of 1,600 kilometers via Chosen, Korea (994.19 miles). The line between Sakai and Takamatsu was extended to Oita in Kyushu, on the southern coast of the world famous Inland Sea of Japan, covering the distance of 405 kilometers (251.05 miles). Compared to the American achievements of 8,302 miles of air mail lines and 17,000 miles a day being covered by American mail flyers on schedule this summer, the Japanese efforts look like the achievements of a oneyear old tot trying to chase Nurmi on a Marathon course.

To make our humiliation a bit more pointed, it should be added that none of these air mail lines of ours are on daily schedule: most of them are on three-times-a-week

All of the lines are run by private companies with Government subsidy. In our blessed Land of the Gods, no enterprise is considered respectable or even grown-up unless it is able to hold up the Government and squeeze out of it a more or less satisfactory sum of easy money.

On November 1, 1925, there were 73 planes in the hands of private or commercial companies. But quite a number of them were old machines handed down from the Army or Navy Air Services. Only 46 machines were rated class A1, most of which are thoroughly modern planes with high-powered engines. On the same date there were 108 civil operators of the first and second class —the so-called third class aviators in Japan can hardly qualify as air pilots in the American or European sense as they are only permitted to fly within a certain limited

radius. At the present time, the number of the first and second class airmen in our country is about 120. Of the 52 first class operators, two are foreignersone British and the other German. Therefore Nippon can only boast of 50 first class flyers at the present time.

Last year was quite a banner year in the air annals of Nippon. The first air pageant of any pretention (Con't on p. 410)



Neel's Hi so-Standard is landed safely on a mountain.

Voct Wien

The Fokker monoplane used for passenger carrying.

# ALASKAN FLYING

LYING is becoming popular in Alaska, particularly during the last few years. It is one of the cheapest ways of travel there and enables people to go where no other means of travel can take them, due to mountains, swamps, thick timber and brush. It is a more economical and faster way of travel because there are not enough people in Alaska 12 warrant building roads and railroads

to all the camps.

One of my first long flights in Alaska, after carrying one hundred or more passengers at Anchorage, on the southern coast, was to fly from Anchorage to Fairbanks (see flight "1" on accompanying map), the headquarters and central part of Alaska. We left Anchorage about three-thirty in the morning and headed north in the direction of Mt. McKinley in the Alaska range. It is a three hundred-mile flight to Fairbanks, following the Alaska Railroad most of the way. We crossed the Alaska range about ten miles from Mt. McKinley at an altitude of 9,500

feet; the mountain looked wonderful in the early morning sun. When about fifty miles from Fairbanks we ran into dense forest fire smoke and had to follow the railroad as close as we dared to fly, not knowing what moment we might run into a tunnel or hillside. But we made the flight to Fairbanks fine shape.

For three weeks the smoke continued so that we could do no flying. Most of the trips were made to the camp of Livengood (see "2" on map), sixty

By Noel Wien miles north, which takes one week to go each way by other modes of travel and 50 minutes by air. Sixty-two round trips were made between Fairbanks and Livengood.

One very interesting trip was flying a surveyor and his secretary to McKinley Park, 150 miles (see "3" on map). The first day we couldn't get in because the clouds hung so low in the five thousand-foot range or foot hills of the big range. We landed on a bar on the Toklat River and waited all day for the clouds to rise. When they didn't, we flew back to Nanana on the railroad, landing in a 600-foot field. The next morning although the visibility had not improved much we flew in as far as we could and landed on a bar of a small creek, 300 feet long, digging both wing tips in the rough gravel. It was sixteen miles further to go by trail but I would have had eighty miles to go to a railroad for repair parts if I had broken something more than a couple of wing tips.

Later I made a flight to Chena Hot Springs, 40 miles,

alighting in a 650-foot soft, rough field (see "4" on map). It was a stall landing and a zoom to the limit over the tall spruce trees and I had loaded the Hisso Standard very light. Two trips were made to this field from Fairbanks.

A number of other flights from 50 to 280 miles were made that season making a total of 7000 miles, with one flat tire the only damage. The last trip was an attempt to take two men up Wiseman (see "5" on map), 210 miles north Fairbanks



Map showing the routes followed by Noel Wien on his flights in Alaska.

ing fifteen pounds and

catching a bad cold

from being wet continuously. The plane

was all right and was

flown out later by Lieut. "Ed." Young assisted by James

Rodebough, while I

rested up. After this

I flew thirteen thou-

sand miles with not

quite such hard luck.

Five flights were made

between Fairbanks

The six-place Fok-

ker monoplane came

in a little later and the

first flight was to

Nome from Fair-

banks (see "6" on

map) carrying my

brother, Ralph Wien,

as mechanic (who

proved his ability in

having not a single

motor failure due to

negligence), two

women and the man-

ager of a large min-

ing company. As the

Yukon River was

high, there were no

good landing places.

Because of heavy

rains, we had to land

the Fokker, with

1200 pounds pay load

-200 pounds over

load, at Ruby, half

and Wiseman.

in the Endicott Mountains. When we were within fifty miles of the place we ran into a heavy snow storm in the mountain canyons and very nearly didn't find the way back. All three of us were glad to get back after 5 hours 10 minutes in the air in a Hisso Standard.

Next season one of the first flights was to Wiseman carrying a woman and an old man with a crippled foot. We made the trip in 3 hours, 20 minutes. Coming back alone the wind had come up head on and I hadn't taken on any more gas. I ran out about half way back and landed at Rampart on the Yukon River. After taking on twenty gallons of low grade gas I took off on the Yukon ice in a calm. But upon crossing a four thousand-foot range the wind was so strong that I could make only 30 of the 100 miles I had to go; the oil pressure gave out and forty minutes later the gas gave out. The

Mobiloil B which I used must have been very good oil to stand up with no pressure and not burn the motor out.

I landed on a sand bar in the dark in a foot of snow with only some dried buns for food, a pistol, an axe and some matches. The next three days I walked forty miles airline, which at that time of the year in soft snow drifts and a foot of water over most of the swamp is considered three times the distance of ordinary walking. I followed bear

and moose tracks wherever I could. killed a couple of squirrels and toasted them over a fire, drank snow water and became thirstier every The walking day. was so hard and I was so hungry and thirsty that I didn't see how could make it. Luckily I did not know I still had three rivers in the break up season to cross.

But I made it in three days, after los-





The landing field at Wiseman on the Kayukuk River (above) and a view of the Yukon River looking towards Rampart.

way to Nome, on a hill top, eight hundred feet long sloping at both ends and with a soft hole in the center. We nosed over breaking the propeller. After replacing it we took off again, by a very close shave, out over the Yukon, four hundred feet below, and landed in Nome. This was the first commercial plane to fly into Nome. Because of no suitable landing places in this unpopulated territory we made the return flight non-stop, 550 miles, in seven hours.

On almost every flight made I saw brown and black bears, sometimes five or six moose at a time, and great herds of caribou on the mountain tops. It was great to fly very close to them and to observe their apparent astonishment.

One day we received a message from the town of Chatanika that in the Beaver hills a man (Continued on p. 409)



The field at Fairbanks, from which most of Wien's flights were made.

# FINAL RACE for SCHNEIDER CUP

HE Schneider Cup race to be held at Norfolk. Virginia, on Armistice Day, November 11, offers a prize which must be successfully defended this year or permanently lost to the United States. England, Italy and the United States each hold two legs of

the Tacques Schneider Cup. As England will not compete this year it will therefore lie between Italy and the United States.

In 1913, the Schneider Cup race was won by France at Monaco: Prevost on a Deperdussin float monoplane. Gnome engine: speed, 44.7 miles per hour.

In 1914. Great Britain won the cup at Monaco: Howard Pixton on a Sopwith float biplane, Gnome engine; with a speed of 55.3 miles per hour.

1915 to 1918 during the war. On account of infraction of the racing rules victory was disallowed in the 1919 race at Bournemouth, England, although Janello on a Savoia biplane flying boat, Isotta-Fraschini engine, made the highest speed of 124.9

Italy won the race held at Venice, Italy, in 1920: Commander Bologna on a Savoia biplane flying boat. Ansaldo engine;

miles per hour.

In 1921, Italy won her second leg of the cup at Venice, Italv: Briganti, who piloted last year's Italian entry, on a Macchi biplane flying boat, Fiat engine; speed 117.4 m.p.h.

speed 102.5 m.p.h.

England won her second race in the 1922 contest at Naples Italy: Captain Biard, pilot of the Supermarine S-4

entered by England last year, on a Supermarine biplane flying boat, 450 h.p. Napier "Lion" engine; speed 146 m.p.h.

Lieutenant David Rittenhouse at Cowes, England, on a Curtiss CR-3 twin-float biplane, 400 h.p. Curtiss D-12 engine, brought the cup to the United States in 1923; speed

177.38 m.p.h.

Through the lack of foreign entries, the United States allowed the contest to pass by default in 1924.

Lieutenant James H. Doolittle last year at Baltimore, Maryland, won the race for the second time for the United States with a speed of 245.713 m.p.h., thereby making a

world's straightaway speed record for seaplanes of the Class C2.

The American team which will defend the Schneider Cup this year will be composed of three Curtiss seaplanes, all identical in construction except for detailed changes necessary to accommodate the new engines installed. These seaplanes are the same

machines that successfully defended the Schneider Cup at Baltimore last year. They have been developed from a long line of victorious Curtiss racing planes, all of which have been of essentially the same basic design. This basic design has been

> improved and refined from year to year by Curtiss engineers, so that the 1925 racers represented over five years of racing experience refinement and applied to one type of machine. So satisfactory was the performance of these machines at Baltimore that it was decided to make practically no changes this year,



@ Wide World. The Italian pilots-Capt. Guasconi, Maj. De Bernardi, Capt. Ferrarin, Lt. Bacula.





© Henry Miller.

The United States pilots-Lieutenants Conant, Champion, Cuddihy and Schilt.



One of the new Italian Macchi seaplanes, powered with 800 horsepower 12-cylinder Fiat engine, entered in 1926 Schneider Race.

the only major change being the use of an improved type of pontoon, designed by the Naval Bureau of Aeronautics and built by Curtiss.

Each of the three machines used this year will have different power plants, a departure from the previous policy of equipping all machines of the racing team with the same type. This year, one machine will be equipped with the 600 h.p. Curtiss V-1400 engine that was used in winning the Schneider Cup race last year; another will have the new 700 h.p. Curtiss V-1550 engine, installed by Curtiss; and the third will have a new Packard geared motor of approximately the same power and installed by the Naval Aircraft Factory. The first two machines will be equipped with one-piece Curtiss-Reed metal propellers, the other will use a two-bladed Standard Steel metal propeller. Aside from the international aspects of the race, there-

fore, interest in this year's contest will be heightened by a "race within a race"—the contest for supremacy between the geared and ungeared types of American motors, and between the one-piece and two-piece types of propellers.

The Curtiss V-1400 engine which will be used in one of the machines is well known through its victories in the Schneider and Pulitzer races of 1925. It develops 600 h.p. and weighs 685 pounds.

The Curtiss V-1550 motor is the latest product of Curtiss engineers and has been under development for two years. It is an outgrowth of the famous Curtiss D-12 motor which is now the standard pursuit motor of the U. S. military air forces. The V-1550 develops 700 h.p. at 2600 r.p.m. and weighs 750 pounds—only 1.07 pounds per horsepower. Some conception of the progress represented in this new motor can be gained by a compari-



Testing out the new Curtiss V-1550 motor in the 1926 Schneider racer. Views shows new pontoons and strut radiators.

the course they must fly in the race.

The son of the builder of the Italian

planes, Muzio Macchi, and Major Gug-

lielmetti, Engineer Corps, Italian Air

Forces, are here in charge of the prepara-

tions. Engineer Castoldi, Macchi Com-

pany designer, and Engineer Ferretti of

the Fiat Motor Company are also part

extreme northeast corner of the timber

bulkhead, Naval Air Station, Operating

Base, Hampton Roads, Virginia. The

course is 50 kilometers; seven laps will

be made, making a total of 350 kilometers

First leg, northeastern direction. Pv-

The start of the race will be from the

son with the D-12 motor which was used in bringing the Schneider Cup to America in 1923. It developed 460 h.p. and weighed 700 pounds. In other words, the new motor develops 240 h.p. more, weighs only 50 pounds more, and fits in the same size fuselage as D-121

The Packard 1500 motor represents a

development which the Navy has been fostering during the past two years. In general lines it is similar to the Curtiss motor, but it contains deviations in design which make its entrance into an international racing contest of great interest. For the purpose of obtaining a more perfect streamline at the nose of the machine, the propeller is driven through a set of gears. The Packard 2A-1500 geared engine is rated at 600 h.p. at 2500 r.p.m. (1250

propeller r.p.m.). Bore and stroke, 5.375 by 5.5 inches. Displacement, 1530 cubic inches. Weight, dry, 870 pounds, or 1.45 pounds per h.p.

From the foregoing, it is apparent that the results of the 1926 Schneider Cup race will be of the greatest importance, particularly as they will undoubtedly crystallize the trend of development in certain phases of power plant design.

Lieutenants George T. Cuddily and Frank H. Conant, 2d, of the Navy and C. Frank Schilt, Marine Corps, have been selected as pilots for the

American team. Lieutenant Carleton C. Champion of the Navy is the alternate pilot. Lieutenant Commander Homer C. Wick is in command of the team.

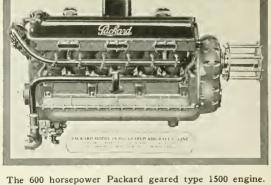
Four Macchi seaplanes will represent Italy, all of which will be of the monoplane type equipped with twin pontoons. These monoplanes are of the externally braced type supported with streamline wires. The wings are swept back but have no dihedral. In many respects they

resemble our Curtiss racers as to body shape and pontoons. The wings, too, are built up in the form of radiator surfaces. The wing span is 31 feet 2 inches.

Each of the ships is equipped with a Fiat A-S2 800 horsepower engine. The reported speed of the planes is computed at 245 miles per hour.

The Italian pilots are Major Mario De Bernardi, commander of the team, Captain Guasconi Guasconi, Captain Arturo Ferrarin of the Rome-Tokio flight and Lieut. Adriano Bacula, Gabriel d'Annunzio's pilot. The United States has assigned two UO seaplanes for use of the Italian pilots in order that they may familiarize themselves with all details of





Second leg, west, Pylon will be placed at the octagonal head of wharf at entrance to small boat harbor, Newport News, Virginia. Planes will pass over the main wharf at Fortress Monroe, 24 kilometers. Third leg, from Newport News to the starting point at the Naval Air Station, 10 kilometers.

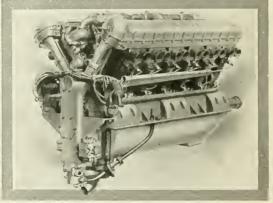
of the entourage.

for the race.

lon will be placed 16 kilometers from starting point.

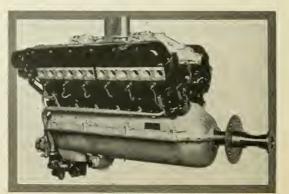
Lieutenant Frank H. Conant tested out the Curtiss

V-1550 racer at Port Washington, L. I., on October 26th and 27th. The results of his trial flights were highly satisfactory and indicate the high speeds to be attained in the race. On one flight over a carefully measured four-andone-half-mile course, Conant flew his racer two laps at an average speed greater than four miles a minute. exact speeds were not given out as official figures, but it is known that speeds of well over 250 miles an hour were reached. This speed is greater than the record-breaking high



The Fiat type A-52 800 horsepower engine.

speed of 245.7 m.p.h. attained by Lt. Doolittle in the Schneider race last year. At the conclusion of these flight tests the Curtiss plane was shipped to Norfolk to be given final tests before the race. The other two Curtiss planes were fitted out at the Naval Aircraft Factory in Philadelphia and shipped from there. The three Italian planes arrived in New York on October 23d and were shipped a few days later to the Air Station at Hampton Roads.



The 700 horsepower Curtiss V-1550 direct drive engine.

As the planes in this entered year's race are evenly more matched than last year's, this final race for the Cup should prove the most interesting race of all.

There is little doubt that a new official world's speed record will be established by Italy or the United States.

# AIR-HOT AND OTHERWISE

If the starving but still husky fighting men of Washington's Army who knelt in the snows of Valley Forge a few generations back and prayed for a United States that would play square with itself and others, trample traitors under-

Mitchell Plan Favored By American Legion

Frank A. Tichenor

unworthy citizen. And now—well, the mighty William Penn on Philadelphia's City Hall wished he could raise his all bronze hands to stop his ears but managed only a pleased grin. He knows the wisdom of American history, does that bronze William Penn; that wisdom teaches him (and us) that honest men cannot be downed in the United States and that soon or late the fools and all their works and all their idiocies are sent into cold storage.

tioned as to the murderous stupidity

which had retarded America's Air

Service. It had done its utmost,

following all the rules, to make the

country think him a bad officer, an

"Call him GENERAL!" the vets roared lustily.

All right. Let's all do it from now on.

The verdict of that sinister court-martial, with its Lenin-Trotsky fishiness, is something good Americans should endeavor to forget even though they can't undo it. Aero Digest was down in Philadelphia and did its best to help along the cheering for the—GENERAL.

Let's call that "Exhibit A."

And they (the boys who actually fought to save the world and did not fill their pockets or play the game of politics in war time) then, at their convention, proceeded to produce what we, in writing, may call "Exhibit B" in our endeavor to present a picture indicating that the United States is really not going to the devil.

By endorsing, en masse and so vociferously that various loud speakers in the hall curled up and died of overwork, the *one defense unit program* for the nation as advocated by Mitchell (as by Aero Digest and other really good citizens) by defying not only the pompous departmental poohbahs but many mistaken politicians of both parties and some of the "great statesmen" of the Administration, the American Legion served on Congress and the rest a notice which has made many emit startled snorts of panic.

The situation is analogous to that which followed the Civil War, but different at that. Then the Grand Army was all Northern and therefore served the North's Republican party, giving it the national control for more than a full generation. That may or may not have been a good thing for the nation. But the vets of this time, the vets who actually woke Philadelphia, are not politically affiliated, and not from any section. There are among them as may happen Republicans and Democrats, Wets and Drys, Southerners and Northerners. In their ranks Dakota hikes with Delaware and California with the Carolinas, while Minnesota with her snows and sweating sun-drenched Mississippi mess simultaneously out of the same can of beans.

There is nothing sectional and nothing politically partisan in the American Legion. It is as American as the feathered Injun on our glorious one cent piece; as nonpartisan as a voting machine.

When the American Legion whoops a court-martial's verdict down, ribaldly derides so favorite a great statesman's pet as the World Court and tells the earth-bound dolts in Washington forthwith to get this nation up into the air with the other nations of the world by the adoption of the One Defense Unit plan and the elaboration and prompt execution of a decent aviation program, commensurate with our wealth, intelligence and love for the women and children whom we never yet have failed to properly protect against aggression—when these things happen there is something doing (Continued on page 404)

foot, fight fearlessly for freedom, honor, honesty and tie official crooks into the ducking stools for immersion in political oblivion, had been present at the American Legion convention in Philadelphia the other day, when the vets cast cold eyes on selfish schemers and grimly warned political shysters in and out of the War and Navy Departments of the National Government that if they do not keep their soiled hands off the machinery of our national defense they will have smashed fingers the next time exservice men go over the top at an election with their ballots in their hands, those kneeling Continental soldiers, clustered about George Washington (recently become a finer figure even than he used to be because we know that he possessed round oaths with which to cuss out cowards and knew how to make rum punch so sturdy that it took a good man like himself to stand up under it) would have forgotten for a moment the bloody bandages upon their feet, the gnawing hunger in their stomachs, the tingling or more likely numbing cold that made it difficult for them to keep their hands upon their muskets.

They would have been comforted by the reflection that while the growing riches of the country they were fighting for would produce a certain crop of swindlers, traitors, sycophants and sissies, some of whom might get into the high places of the Army and the Navy and other portions of our national defense machinery, the American fighting man of 1926, the man who had proved his willingness to soak or swelter in the French trenches as the weather might decree, his willingness to brave mephitic, strangling clouds of poison gas and defy such hurricanes of bullets as our Continental soldiers never even dreamed of, would still be all American, all for America, anti-politician, anti-bureaucrat, anti-boodlers, anti-gold lace, anti-high hat—anti all unamerican flub-dubbery.

And pro-Billy Mitchell.

Wait! "Three cheers for Billy Mitchell!" shouted Sam Kelly, of Powder River, Montana, who, having been a doughboy while the bullets flew, was now dressed as a cowboy (his regular job) and as such fired bouquets at the great patriot whom the national capital's sad servitors of selfish departmental special and anti-patriotic interests almost exactly a year previously, while the convention before this had been actually in session, had robbed of the official title earned in the World War.

"Call him GENERAL!" roared from the District of Columbia, the very yard which has been most befouled by our nation's carefully selected troupes of perfectly trained

bureaucrats.

As William B. Mitchell marched down the street at the head of the Vincent Costello Post, of Washington, D. C., he was given an ovation of such a startling nature that a bystander of long memory likened it to that which Dewey got when he came back from winning against hopeless odds in old Manila Bay.

The object of the official United States Army courtmartial, which had been in session just a year before, had been to destroy this man who had so violated bureaucratic rules as to tell the truth and shame the devil when ques-

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## COMMON SENSE

RESIDENT COOLIDGE may have a good Advisory Committee on Political Strategy, but we suggest the addition to it of Will Rogers. He shows his fitness in one of his "Letters of a Self-Made Diplomat to His President," used in The Saturday Evening Post (Copyright 1926), from which we have permission to extract the following words of wisdom:

"The next war is going to be all in the air. Nobody ain't going to hand you a pair of putties and a Helmet in the next war. They are going to slip a throttle of an airship into your hands and say, 'Go aloft and see if you are lucky enough to come down of your own accord or will somebody have to bring you down.' It will be as big a disgrace ten years from now not to know how to run an airship as it is now not to know how to run a flivver. The day of the old General on the gray horse, standing up on a little mound, waving his sword telling the other boys where to

go—that's museum stuff . . . . "And I am mighty glad, Mr. Coolidge, that Henry Ford finally convinced you that airplanes were practical. It looked kinder bad for you there for a while. I dident think you was going to be able to see it. Now you know that Ford wouldent leave the ground and take to the air unless things looked pretty good to him up there. What Borah is to Politics and fantastical things like that, why, Ford is to practical business needs. So keep one eye on that old Boy. He knows more than what a Ford car is made out of. I see where you and him are working on it. I knew he had gone about as far as he could go on the ground unless you breed more people.

"So if you want an issue that you won't have to be ashamed of, or stand astraddle of, why, you shout Airships -Commercial, Private, Government, Army, Navy; and even the air department can do with another one. You string with Ford and he will get you further than Stearns or Butler or any of that gang. Listen to him and America won't have to sit all day in a day coach to get a hundred miles . . . . Now do something on this and don't let it get in with that bundle of suggestions marked Farmers Relief."

# JUNK LIBERTY ENGINES

SECRETARY HOOVER is quite right in doubting the advisability of putting on the market at prices below the cost of manufacture the national surplus stock of Liberty aviation motors.

Such an offering at this time would be disastrous to the manufacturers of engines who for the past eight years have labored ceaselessly and hopefully to produce modern types, equal to the best made elsewhere and far better than these now ancient Liberties.

Aircraft manufacturers, seizing on these "bargains" and attempting to recondition them, necessarily would stop supporting engine-builders striving to give us new things, better things—the best things—and that would be one more of those stupid blows which this nation from time to time has struck at its air interests.

This would be a move inimical to our national defense interests, it would be false economics, it would place another handicap upon the progressive development of our commercial aviation.

The sale of these engines virtually would bring to an end for the present the possibility of engine improvement in this country, and thus would assure another handicap placed upon us in the efforts which a few are making to put America where it actually belongs in the van of the world's air development.

These Liberties were good when they were built, but they fit planes designed before the end of the war and the advance since they were built has been enormous. They would kill the market for all newer models. America cannot afford to have its plane-designing and plane-building held back until these old engines are worn out; and heaven knows we can't afford to lose the lives which an effort thus to work with old material certainly would cost among our flying men.

### SAVE A DOLLAR-LOSE A LIFE

UPPLEMENTING Mr. Hoover's statement D. B. Colyer, general superintendent of Air Mail, issues a release asking for sealed proposals for 24 DH's, described as "surplus air mail service planes." They now lie idle (for good reasons) on the various air mail fields between Maywood, Illinois and Concourse, California. He says, concerning

"These planes, with Liberty motors, are to be sold as is, where is and with no guarantee as to condition of same." Why? Is Uncle Sam so desperately hard up?

Such antiquated war-built material has cost America life after life. Do we need to keep the slaughter up just to save a dollar? It is about time that legislation should be passed forbidding sale of such equipment.

From time to time the Government at Washington earnestly declares its ceaseless yearning to aid and encourage aeronautics. If this is an evidence of the means they see whereby they may assist the art and business, it would be better if all aeronautical matters, even the fighting for our national defense, should be taken out of Governmental hands and placed in the control of really intelligent civilians. What is it about official jobs in Washington that saps men's wits and makes them morons?

These old Postoffice planes will find a market and in so doing will prevent the sale of twenty-four modern, safe and worthy ships. It is conservative to estimate that the sale of this two dozen will cost twenty lives among those gallant youths who try to fly them for their purchasers.

Long since these planes which the Government now offers in bargain lots to unsuspecting citizens were dubbed "flaming coffins" by the pilots who had to work in them day by day. This very day the bereaved mother of a pilot, victim of a plane of this sort, has been passionately weeping in my presence, begging that this sale be stopped so that other mothers may be saved the agonies which she has known.

Respectfully I direct this to the intelligent attention of the Guggenheim Foundation, one function of which is the promotion of safety in aeronautics, with the suggestion that if Uncle Sam needs money so desperately that he is willing to sell certain death to his young men in order to get hold of a few thousand, they might use some of their magnificent endowment to buy from him and utterly destroy this group of warranted-to-fly-badly-but-kill-surely, antiquated, antedated, rotten, dangerous ships.

# A NOD AND A WINK

THERE'S a thought or two in my mind regarding flying fields that I'd like to rid myself of, on account of lack of storage space. I find myself happier when my mind is a complete blank, or vacuum, its usual condition—a sort of Nirvana, as recommended by Krishnamurti. This enviable state is enjoyed as a birthright by most senators, congressmen and Naval Board officers. But to the ma-

jority of us ideas will come occasionally, and must be handed out to others so that our minds again may sink into the peace and comfort of utter emptiness. I shall therefore unload these ideas of mine and go to sleep, in which I shall be following the example of the National Aeronarcotic Association, the Sleeping Beauty of the Air, which was laid away in moth-balls at the Philadelphia Convention with

Porter Adams as Keeper of the Balls.

I've been interested to hear of all these new flying fields opening up over the country. When I was a boy a pilot couldn't find a place to land an airplane, but it's getting so now that a farmer can hardly find a field to plant a potato in. Practically the whole country now is subdivided into landing fields, either municipal, commercial, air mail, army, or emergency. Anyhow, that's the impression I get from reading the newspapers and the aeronautical journals.

One authority informed his readers that it was possible now to fly from New York to Boston and be within gliding distance of a landing field every inch of the way. He didn't specify the altitude necessary for this performance, but from my own observations of that route I should say, offhand, that a pilot would need to be up at least 26 miles, giving him a glide of 100 miles, roughly—especially roughly if he glided into New England. I have flown over that route a couple of times in the last few months and decided then that the only proper way to fly it was to achieve an altitude from which I could glide comfortably into the Garden City, Hartford, or East Boston landing fields. I saw no others. Mind you, there probably were many emergency fields, as the paper says, but they were covered with trees and rocks. If some of those Massachusetts hills were just sliced off at the bottoms and upended into the valleys, they'd make the country ideal for flying. And when that is done I'm going over the route again-via the New York, New Haven and Hartford.

But there certainly are a lot of fields around the country, some of them so large that they're almost visible from the air. An experienced pilot arriving at one of these for the first time, without a microscope, can pick it out at a glance from the nearby subdivision. It's much smaller than the subdivision, and usually has an old Jenny fuselage and a tool shed in one corner. Seldom by any chance has it a good wind-cone so the visitor may see how to land, nor has it a large circle of white stone in its center so the stranger may be certain which of half a dozen fields is the landing field. The operators of small fields seem to take the attitude, "I know where my plot of ground is, and I know which way the wind is blowing. If a visitor doesn't know it, that's his misfortune."

If the operator's failure to mark his field was due to lack of funds, I wouldn't mention it. But that is never the reason. A few square feet of canvas, an iron hoop mounted on a spindle, and a few hours' labor will make a

Fields of Fancy
By

Caldwell

good wind-cone; while a couple of loads of crushed stone and the labor of spreading it will make a white marker circle that is visible for a mile or two. The reason for fields not being marked (preferably as required by the International Air Regulations, which, while not in force in this country, are a good guide) is the plumb plain indifference of the operator. He just doesn't give a hang

whether a stranger in difficulties can spot his field and glide into it, or whether he will miss it entirely and select the largest grain field in sight and plump down into the middle of it—and pay the farmer damages before he is allowed

to get out.

Last winter, for example, I toured the Eastern and Southern States in a Travel Air. (I'm touring by subway just now.) I marked on my maps any landing fields between stops; and at each of these supposed fields I circled around and tried to pick them out, merely from curiosity. In many instances I might just as well have tried to pick out a certain blade of grass. Most of the fields weren't marked and unless they had a hangar they couldn't be distinguished from a hay field. These fields were, of course, small private town affairs, or emergency; but they could have been found easily if they had been marked. As it was, the information, "3 miles East of Podunk" was not sufficient to enable anyone to locate them.

I've often been amused to hear some commercial operator discussing gravely the great convenience it would be to air travelers if every town would paint its name on the roof of some large building so lost pilots could find where they were without having to land and ask. I've been amused because I've known that although the speaker operates from a field with a large hangar on it, he hasn't the name of his town painted on his own hangar roof; he hasn't a marker on his field; and if he has a wind-cone at all it's some grimy little rag quite invisible from 300 feet.

In fact, this marking business seems to be something that the operators expect the Standard Oil Company or the Ford Motor Company to do for them. These companies have ordered their agents to paint the name of their town on the roofs of their buildings, where possible, and a fine generous action that is, and most helpful. But the pilot from South Carolina who finds himself off his course in Michigan will wonder in his annoyance why someone hasn't painted a town's name on a warehouse roof; and when he finally gets back home it will never occur to him to paint the name of his own home town on a roof for the guidance of a stranger from Michigan. Whether this attitude is due to carelessness, indifference, selfishness or plain stupidity, every man will decide for himself. But certainly the attitude exists. If he wanted to do it, I don't think there is a pilot in any of our small towns who couldn't prevail upon some merchant with a large warehouse to paint the town name on its roof.

I could name people who should mark their fields and towns, and who haven't done so. But I was raised on Glaxo, which builds better babies, and has made me the kindly, gentle soul I am today. So I have too much of the milk of human kindness in my system to name and hold up to deserved contunely these thoughtless wretches who would leave a fellow-pilot to wander through the air, lost, cold and homeless, rather than (Continued on page 405)

# KREIDER-REISNER "MIDGET

ESIGN work on the Kreider Midget was started in April of this year and on July 10th construction began in the Kreider-Reisner Aircraft Company's shops in Hagerstown, Maryland. This little plane was designed by F. E. Seiler, assisted by A. H. Kreider and George Hardman.

In less than two months and on the day of its first race at Philadelphia (September 8th), it was given its first trial flight. In the afternoon, the second time off the ground, it won second place in the 50-mile Dayton Daily News Race.

In the Aero Digest Race, a cross-country jaunt in search of a missing altitude marker created some excitement when the Kreider Midget was reported down. An airplane provided to act as an altitude marker reached the designated

place when the other planes were making their second lap, and the Midget again made its appearance in the race to the relief of everyone. In compensation for this handicap the judges awarded it 3rd and 4th prizes.

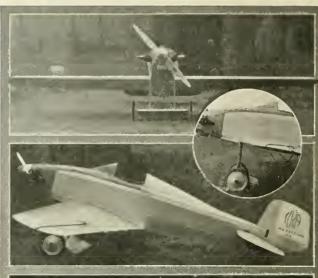
In the third and last race for light planes, the Scientific American Trophy Race (open to planes with 300 cubic inch displacement or less) A. H. Kreider and his Midget came through winning in the best time of all three races, the average speed attained being 94.49 miles an hour.

Extreme satisfaction is experienced by the manufacturers in winning this race with an American motor of new design and reasonable cost. The Wright-Morehouse engine was used which "putted" along mile after mile with clocklike regularity.

It is interesting to compare this performance to the high powered military single-seater pursuit planes which with 600 h.p. (twenty times as much as the Midget), made a speed less than double the speed of the Kreider

Exceptionally clean lines in design are obtained by the extensive use of cantilever construction. No external bracing is employed on wings, tail surfaces or tail skid.

External fore-and-aft bracing has even been omitted from the landing gear which employs one vertical strut only on each side of the fuselage. These struts slide up





The 29 h.p. "Midget" plane has a speed of over 100 m.p.h.

Wright-Morehouse Engine used in the "Midget."

and down in the fuselage by extending through upper and lower longerons in slide sockets. Shock cords are within the fuselage in the plane of the side frames; they allow a vertical movement of six inches for each wheel.

The wings are designed for a load factor of 9.5 and are built with a single spruce box spar.

The one-piece balanced rudder and onepiece balanced elevators are constructed similar to the wings with a single box spar.

Landing gear and tail skid are of alloy steel tube. The fuselage framework is of welded steel tubing, wire braced to avoid relying on any welds in tension. After the races the fabric was removed from the fuselage; a careful inspection revealed no defect in design, material or workmanship.

Characteristics of the Kreider-Reisner "Midget" with the two-cylinder, air-cooled Wright-Morehouse engine:

### Dimensions

Wing	span								 									. 2	20	fee	et
Chord	at roots									. ,									4	fee	et
Chord	at tips																		2	fee	et
Overal	1 length								 				1	5	f	26	ŧ	2	in	che	es
Overal	l height													4	f	26	ŧ	6	in	che	es

# Areas in Square Feet

Main	plan	е.						55.5
∖xle	fairi	ng		 				4.5
\ilero								
Rudde	r							4.4
Elevat	ors							10.0

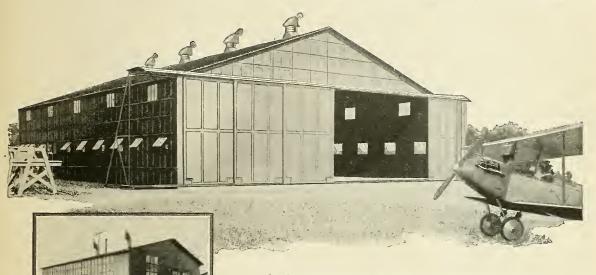
# Weights in Pounds

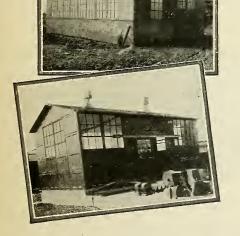
Weight of plane empty	.289
Weight for 60-mile flight	
Weight with 170 lbs. load.	.490
Wing loading (per sq. ft.)	8.33
Power loading (per h.p.)1	

### Performances

Horsepower at 2500 r.p.m	29 h.p
Maximum speed	
Landing speed	er hou
Cruising speed90 miles p	er hou
Fuel consumption (high speed)43 miles pe	r gallor
Fuel consumption (cruising speed)60 miles pe	r gallor

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# BRITISH LIGHT PLANE MEET

HE two-seater light airplane competition held at Lympne, England, from September 10th to 18th, proved of considerable interest to the sportsman, the private plane owner and the potential private owner. The outstanding need of today is an efficient light plane at a reasonable price—and this, of course, simmers down to the need of a low priced engine.

Only one new engine was produced for this year's competition—the Armstrong-Siddeley "Genet"; five new planes were designed, out of which only one competed, the Avro "Avian"

The main event was for prizes amounting to £5,000 offered by the Daily Mail. The basis for this year's competition was different from the two previous in that engine weight, 170 lbs. maximum, was specified instead of engine capacity. The ratio of useful load carried to the weight of fuel consumed for the total distance was used—the minimum load, however, being 340 lbs. (weight of pilot and passenger but not fuel included.) It was flown over six series of circuits totaling 1994 miles, at an average speed of at least 50 m.p.h. The machines had to pass elimination trials on the first two days of the meet before entering the competition itself.

The Hawker "Cygnet," with Bristol "Cherub" engine, piloted by Flight-Lieut. P. W. S. Bulman, won the first prize, covering the 1994 miles in the flying time of 30 hours 41 minutes 15 seconds, at an average speed of 64.98 m.p.h. With a total weight of 900 lbs., the "Cygnet" used 388.828 lbs. of fuel. The economy figure was 2.203 lb.-miles per lb. of fuel. On the same basis, the two-

seater Hawker "Cygnet" is much more efficient than the best of the 1923 single-seaters, which made only 1875 lb.-miles per lb, of fuel,

The second prize was won by the Hawker "Cygnet," entered by the R. A. E. Aero Club of Farnborough and piloted in turn by Flight Lieuts. Chick and Ragg. The total flying time was 35 hours 48 minutes 35 seconds; average speed, 55.68 m. p. h. This plane was the same as the first prize winner except it carried a smaller load—850 lbs. total. The fuel consumed was 398.891 lbs., making the economy figure, 1808 lb.-miles per lb. of fuel.

Third in the competition was the Bristol "Brownie" piloted by Mr. Uwins. Total flying time, 33 hours 23 minutes 45 seconds; average speed, 59.71 m.p.h. This low-wing monoplane carried a total weight of 1,010 lbs. and consumed 402.094 lbs. of fuel; economy figure, 1,687 lb.-miles per lb. of fuel.

The fourth machine to complete the course was the Parnall "Pixie" piloted by Mr. Courtney. Total flying time, 33 hours 49 minutes 45 seconds; average speed, 58.94 m.p.h. Total weight, 925 lbs.; economy figure, 1,541 lb.-miles per lb. of fuel.

The "eliminated" then raced for the Stewards Prize, a consolation race, over a 25-mile course. This was won by the Cranwell C.L.A.4 biplane in 4 minutes 5 seconds. Second in the race came the Blackburn "Blue Bird" and third, the Supermarine "Sparrow II."

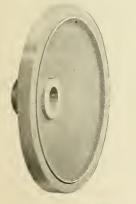
The Society of Motor Manufacturers and Traders offered a prize open to the planes completing at least 50 per cent of the 1994 miles. (Continued on page 411)



Representative light airplanes entered in the recent British air meet: (top) Blackburn "Blue Bird" and Avro "Avian." (center) Bristol "Brownie" monoplane. (bottom) Hawker "Cygnet" (first prize winner) and the Supermarine "Sparrow II."

# BOHNALITE PERMANENT MOLD CASTINGS





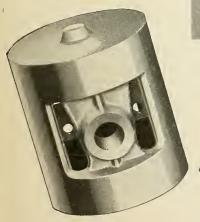
# With a Resultant Saving in Cost

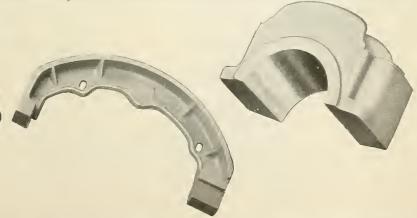
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in' hell are you down for?'

"'Tail heavy, left wing low

and the motor's weak', said

Dizzy. 'I want to do my alti-

tude test and then I want to stunt.

# THE YARNS OF "HELL'S BELLS" O'NEIL

Jones," said "Hell's Bells" O'Neil, "took discipline as a personal insult. He came into the army to fly and

stayed to fight. He couldn't see any use for major generals and he never once got his uniform on right. They used to say that the only time he would do anything according to K. R. and O. would be at his own funeral when he couldn't open his face to object.

"A little sawed-off runt he was and ugly looking as sin, but you can't wear an Arrow collar in a ship so what the

hell?

"Well, they sent Dizzy out to Leaside 'drome when he knew enough about Toronto to graduate from Ground School and after they taught him to fly Jennies and saw how good he was, they decided to show him that war is a serious business. So they set him to work shoveling snow, ashes and gravel and Dizzy became a pile-it.

"Now, somewhere in Dizzy's ancestry there lurked the blood of murderers and pirates. One day he dropped his shovel, told the Sergeant to go to hell and walked off. When they marched him, under escort, to Wing H.Q., charged with every crime but throwing bombs at the King, he simply told the Major that he had enlisted for a flying war and didn't aim to take part in any shoveling war. The Major gave him three day's Clink for having the wrong attitude and lectured him on how England expected every American to do his duty.

"After three days Dizzy came back to the land of the living with his teeth set, a speck of red in his eye and a great

hatred for the Corporal of the Guard.

"The next day a committee of local generals decided that the gravel, ash and snow sector could break-off and do a little flying by way of recreation for a change, so they had the buses rolled out, passed the word and went home while the rough boys played. Dizzy was the first man in

the first Jenny. There was method in his madness. He hopped off, circled around until he saw all but one ship leave the ground. Then he came down, landed and taxied in.

"That one ship still on the ground was the best bus in the Flight and belonged more or less to Captain Hardguy, the chief slave driver of 90 Squadron who was a windy lad for a three - pip - artist. The skipper sees Dizzy come in and yells at him.

"'What in bleed-

Dizzy Jones' Court-Martial

James Warner Bellah

Can't you give me a better kite?'

"Now 'stunt' was a word the Captain didn't like to hear.
He believed in straight flying for moral and political reasons and his one fear was that some day some cadet would ask to be taken up and shown the fine points of looping and spinning. This was before there were any books written on 'How to Fly in Your Own Home in Ten Easy Lessons' and Gosport was still sleeping peacefully.

"Well the Captain takes one look at Dizzy, points to his own machine and walks away. Dizzy climbs in and takes

off.

"He told me afterward that what he did, he did because he thought it would make the Wing O. C. feel bad. What he did was this. He took that Jennie across a corner of Lake Ontario and flopped it in the States where he belonged. He had it refilled with gas and oil on the King's credit, made a speech to the yokels, took off again and started for Detroit to see his girl. Ten miles from Detroit he crashed it and crawled out of the wreckage in time to receive an invitation to luncheon from the Chamber of Commerce, an invitation to dinner at the local Militia Mess and an invitation to sign 10,000 autograph books. In fifteen minutes the souvenir hunters had taken everything away but the hole the machine had made in the mud. Dizzy was motored in state to the biggest hotel where the band played Rule Britannia and the management gave him the bridal suite gratis.

"Eight days later Dizzy was back at Leaside in chains charged with: (1) Absence without leave 7 days, 22 hours and 31 minutes. (2) Stealing Government property. (3) Destroying Government property. (4) Misappropriating Government property. (5) Beggaring up Government

property. (6) Impersonating an officer. (7) Being improperly dressed. (8) Having dirty finger nails. (9) Not being properly shaven. (10) Having a generally dirty attitude.

"Just before the court-martial passed sentence, which would be about forty years cracking rocks, they asked him if he had anything to say. He did. He said 'Gentlemen, I advise you to be lenient. I'm here to fly only and I don't intend to (Cont'd on p. 411)



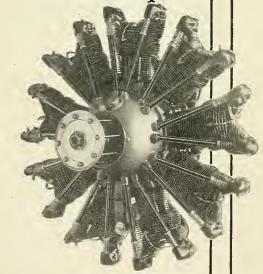
"Gentlemen, I advise you to be lenient. I'm here to fly only and I don't intend to spend this war in jail. I'm an American by birth and a Canadian by mistake."



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# WESTERN NEWS



Over San Diego-Ryan Airlines delivering second mail plane to Colorado Airways.

# IMPERIAL VALLEY TOUR

By F. E. SAMUELS

THROUGH the courtesy of the Aero Corporation of California, I made a trip into the Imperial Valley, stopping at all towns with landing fields, to demonstrate the maneuverability, stability, and pay-load carrying capacity of the Eaglerock plane, for which the Aero Corporation of California is the Southern California and Arizona distributor.

At ten o'clock Monday morning, October 4th, we were ready to take off from the Aero Corporation field on Western Avenue. When I saw the load the little ship was about to carry I had some misgivings, knowing the country we were about to cross. There was Jack Frye, our pilot, weighing 160 lbs.; Walter A. Hamilton, chief mechanic, weighing 235 lbs., who shared the front cockpit with me (I weigh 155 lbs.); we had a suitcase, a large box of literature and a number of rocker arms, for which the corporation have the agency, which weighed about 75 lbs., making a total of over 625 lbs. But I am always willing to take a chance with two like Frye and Ham-

A few minutes after ten we took off, and that is just what I mean—no slow overloaded take-off, but a snappy, short taxi and right up into the air, two thousand feet in less than five minutes. Over the town of Long Beach, and along the ocean, we passed all the beaches and summer resorts. Over Torrey Pines Pass and San Diego and landed on the Ryan Airlines field, just 90 minutes from our start—130 miles.

Claude Ryan took us on a tour of inspection through the new plant where we saw six Ryan M-2 monoplanes under construction. There we showed the performance of the little ship to a number of prospective purchasers, which held us until it was too late to start across the mountains; and we spent the night in San Diego.

We tried to get an early start Tuesday morning, but on arriving at the field, about 8.30, we met two prospects who had been waiting for demonstrations. This held us until nearly eleven before we got away. Then a steady climb of over 9000 feet through the mountains to get over the hump. Then a slow drop down the mountains and across the desert, into the little town of Imperial. From here we visited El Centro and

Wednesday morning we made another try for an early start, but on arriving at the Imperial Airport, at 7 a. m., we made demonstration flights until nearly 10 o'clock before taking off.

Flying low over the beautiful and seemingly boundless farms of Imperial Valley we headed for the Salton Sea. more than 100 feet below sea level. Just before reaching Salton Sea we passed over the gun clubs and duck farms, where in season gunners from all over this section of the country gather to bag the limit. We passed great flocks of wild geese, flying in V formation.

Reaching the edge of Salton Sea we flew the entire length of this 40-mile inland salt lake, gaining altitude until when we entered San Gorgonia Pass we had about 4000 feet; then a stiff climb to over 9,000 feet, crossing Mt. Jacinio at its highest peak, instead of following the Pass, thereby cutting off considerable mileage to Riverside, our next stop.

which we reached in just one hour and forty minutes—about 160 miles. Here we put the ship through its paces for a group of interested people, and started for Los Angeles, about 65 miles which we flew in 45 minutes, arriving at the Aero Corporation field at a little after one o'clock.

At San Diego we had a bad spark plug, and put in a new set; outside of that we made the entire trip without a miss in the motor and without a particle of trouble of any kind.

# DEPUTY AIR SHERIFFS

FIVE pilots, who will compose the first airplane squadron of deputy sheriffs, were sworn in by Sheriff William I. Traeger on September 27 at the airport of the Aero Corporation of California.

The deputy's oath was administered to Paul E. Richter, Jr., W. Jack Frye, Monte Edwards, Walter A. Hamilton and Lee Willey, following an inspection of the airport and equipment by the sheriff.

According to Sheriff Traeger, the airplane squadron will become an important link in the organization to apprehend criminals and enforce the laws of the country. The squadron will prove especially valuable, it is asserted by the sheriff, in trapping criminals who are attempting to flee the county or who are seeking refuge in the hills and canyons.

After the ceremony of administering the oath of office to the new deputies on the Aero Corporation field, Sheriff Traeger, was made an honorary pilot of the Aero Corporation of California with an appropriately engraved set of the official pilots wings worn only by the fliers of that organization. The new deputies then took off in formation and, with the Alexander Eaglerock, the Sheriff's official plane, leading, executed several maneuvers demonstrating how they expect to pursue and apprehend fugitives and aid other deputies pursuing by automobile.



Theodore Woolsey (right), designer and builder of the "Thunderbird," and Frank Samuels deliver October Aero Digests to the flying fields of South California,

# THE ADVANCE AIRCRAFT COMPANY

largest producers of commercial aircraft in America announce price reduction on the improved

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\$ 2 2 5 0 at Troy, Ohio

More WACOS are now in service for profit and pleasure than all other ships now in production in America.

# THE PERFORMANCE MADE THE DEMAND

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THE ADVANCE AIRCRAFT COMPANY TROY, OHIO



Peggy Hall, Santa Ana aviatrix.

# CIVILIAN FLYING AT CLOVER FIELD MEET

MORE than twenty-five thousand persons were present at the Round the World Flight Commemoration Air Meet held at Clover Field, Santa Monica, Calif., on September 26. This fact coupled with the fact that there were twelve types of commercial ships represented at the meet that were not even being manufactured at this time last year proves that aviation is rapidly coming

into its own on the coast.

The Alexander Eaglerock piloted by Lieut. Paul E. Richter, Jr., of the Aero Corporation of California with Lee Willey as observer won first place in the Civilian Class 3 (110 h. p. and under) with a time of 100 minutes 29 seconds. This was the fastest time made by any civilian plane regardless of class and Lieut, Richter was awarded the Civilian Sweepstakes Trophy offered by the Western Flying Magazine. Other prizes for the winner of this class were the Reginald Denny Trophy and \$200 in cash. Second in this class was the Fisk Sport. pilot Frank Clark, time 105 minutes 21 seconds: third, K. W. Montee's "On-to-New York" plane, pilot K. Montee, time 110 minutes 2 seconds.

# YACKEY SERVICE

By J. B. ALEXANDER, RYAN AIRLINES

T IRED and hungry, two aviators flying from San Diego to Detroit, dropped into the Yackey Airport about 1:30 one summer's afternoon and staggered from their powerful little monoplane to the office hangar. It was imperative that they reach Detroit by sundown.

The man in charge of the office miled, asked them what kind of gasoline they wanted and if they had eaten. The two hungry looking gentlemen only muttered something and sank exhausted into chairs.

"There is a brand new Ford coupé just outside the door; drive down the road about a quarter of a mile and on the corner is a lunch counter." The men staggered out.

Forty-five minutes later they returned, they looked better, they felt better. On the line their monoplane was waiting; it had been warmed up, the oil checked, gasoline tanks filled, wheels greased, and the cowling cleaned. The men paid for their gasoline and headed for Detroit. They arrived in ample time

Few airports in the United States would give a visiting aviator service as quickly and as willingly as this. It is the kind of service really appreciated.



Pathfinder ship landing at Santa Ana.

Left to right—Frank Samuels, Aero Digest Representative; Lt. J. A. McCalet, Los Angeles Police Force; Glenna Jean Itill, winner of Air Queen connest, sponsored by the Santa Ana Exchange Club; Wm. K. Gibbs, Sunday Examiner; Edward Hubbard (pilot) president. Northwest Air Service—and B. E. Morthland, Commodore of the Santa Ana Air Club, Santa Ana, California.

# These fellows bought Travel Air Planes —Read what they say:

Chas. R. Bowman,

Pilot
Pacific Air Transport
San Francisco, Calif.

"The J4 Travel Air and myself arrived safely in Frisco yesterday—successfully completing the longest commercial trip on record.

"First and foremost I wish to express to you the pleasure It has been to fly your plane on such a trip.

"The remarkable part of it is that not the slightest change or repair was needed during the 18 days of travel from Los Angeles to Portland, Me., and back to Frisco with a total flying time of 76 hours and 50 minutes covering approximately 6,000 map miles. The complete ease that the plane showed in handling a full load, taking off at high altitudes was surprising to say the least. The highest place I believe was 6200 feet. Believe me, I'm doing all I can to hoost for Travel Airs and I'm sure that any future additions to our line in planes of that class will be Travel Airs. For I can conscientiously say that they are the best joh I've ever flown."

Herbert G. Fales, HUNTINGTON, W. VA. "Our trip to Huntington was most enjoyahle. This and other trips which I have taken, hear out my contention that air travel is the most enjoyahle and is the least tiring means of cross-country transportation, and I can imagine no aircraft which would handle more easily than the Travel Air. It has given me many pleasant hours this summer."

—many others are equally enthusiastic

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NATIONAL AIRWAYS SYSTEM, LOMAX, ILL.

# LAGUNA BEACH FIELD

AGUNA Beach Airport is located about L'AGUNA Beach Airport is located three miles southeast of Laguna Beach, California. The field, which is about 100 feet from the ocean and directly on the Coast Highway, is about 1,300 feet long, 600 feet wide, with the long way running east and

The airport was built for the private use of Joseph Skidmore, president of Skidmore Bros. Corp., realtors of Laguna Beach, and also to promote their subdivisions in this section. It is an asset to the entire community and, in addition to that, it is really the only airport along the coast line between Long Beach and San Diego.

On the field there are a few hundred gallons of gasoline, oil, funnels and other supplies. No attendant is in charge. While the field is primarily a private field, it is open for use by the public whenever they care to use it. All ships are welcome.

# NEW TAFT AIRPORT

D. B. BUTT and William Greenwood, formerly associated with the Aero Corporation of California, have opened and are operating an airport on the Bakersfield-Taft highway, five and one-half miles from the city of Taft. The firm, known as the West Side Aero Corporation of Taft, California, will engage in commercial flying and student instruction.

The field, when finished, will be 1,500 feet wide and one-half mile long. It will be of



Gladys Ingels replacing wheel on Art Goebel's plane after a midair change.

great benefit to flyers traveling north or south by the inside route, as it is about halfway between Los Angeles and San Francisco, an ideal location for emergency landing or to fuel up. A gas and oil station is on the field.

# REPLACING A WHEEL DURING FLIGHT

VER since last May when Art Goebel EVER since last May when and Al Johnson replaced a wheel in midair the subject has caused many debates among pilots. It seemed to he the general impression that it was only by luck that the boys were able to make the replacement. At a recent gathering of the air fraternity, Gladys Ingels declared that she could do the same. A wager was made, and Art Goebel and Tack Frye of the Aero Corporation of California agreed to furnish the planes.

After leaving the ground Art Goebel pulled a wire that released the wheel of his

With a wheel strapped to her back Gladys started out, piloted by Jack Frye and made a mid-air change on to Art's plane.

Working her way beneath the plane she adjusted the wheel only to find the axle had slipped, making it impossible to lock the wheel in place. Strapping the spare wheel to the framework of the ship, she maneuvered to a position where she could force the axle to its proper place. Returning to her perilous position Miss Ingels adjusted the wheel, inserted the cotter-pin to hold the huh-cap in place and made her way to the cocknit to make a safe landing.



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# WITH the SERVICES

#### PAN-AMERICAN FLIGHT

PLANS for the U. S. Army Air Corps Pan-American flight have been completed. The flight will consist of five airplanes and ten officers of the U. S. Army Air Corps. Major Herbert A. Dargue has been appointed commander, and the other officers selected for the flight are Captains Arthur B. McDaniel, Ira C. Eaker, and Clinton F. Woolsey, and First Lieutenants Bernard S. Thompson, Leonard D. Weddington, Charles McK. Robinson, Muir S. Fairchild, Ennis C. Whitehead and John W. Benton.

Advance officers have been selected for each division of the flight who will make all necessary arrangements for landing, fuel and repair facilities. All foreign countries along the itinerary have given their consent to the visit of the airmen. The route of the flight, with mileage, and advance officers of the divisions follows:

First Division—First Lieut. Byron T. Burt, Jr., advance officer.—From San Antonio, Texas to Brownsville, Texas, 250 miles; to Tampico, Mexico, 255; to Vera Cruz, Mexico, 240; Puerto Mexico, 135; Salina Cruz, Mexico, 150; Guatemala City, Guatemala, 385; San Jose, Guatemala, 55; San Salvador, Salvador, 110; Ampala, Honduras, 110; Managua, Nicaragua, 125; San Jose, Costa Rica, 225; David, Panama, 210; France Field, Panama Canal Zone, 250 Total 2500 miles.

Second Division—First Lieut. Melvin B. Asp, advance officer.—To Buenaventura, Colombia, 400; Tumaco, Colombia, 185; Guayaquil, Ecuador, 455; Tumbez, Peru, 100; Paita, Peru, 130; Trujillo, Peru, 255; Lima, Peru, 300; Lomas, Peru 290; Islay, Peru, 210; Tocopilla, Chile, 410; Taltal, Chile, 250; Coquimbo, Chile, 330; Santiago, Chile, 305; Talcahuano, Chile, 350: Valdivia, Chile, 235. Total 4205 miles.

Third Division—First Lieut. Samuel C. Skemp, advance officer.—To Neuquen, Argentina 300; Bahia, Blanca, Argentina, 320; Buenos Aires, Argentina, 565; Santa Fe, Argentina, 240; Corrientes, Argentina, 315; Asuncion, Paraguay, 180; Corrientes, Argentina, 180; Parana, Argentina, 315; Montevideo, Uruguay, 360; Rio Grando do Sul, Brazil, 340; Florianopolis, Brazil, 375; Santos, Brazil, 300; Rio de Janeiro, Brazil 210. Total 4000 miles.

Fourth Division—First Lieut. Wm. B. Souza, advance officer.—To Victoria, Brazil, 270; Porto Segura, Brazil, 280; Bahia, Brazil 240; Pernambuco, Brazil, 435; Natal, Brazil, 160; Camocim, Brazil, 455; Maranhao, Brazil, 240; Para, Brazil, 370; Cayenne, French Guiana, 515; Paramaribo Dutch Guiana, 210; Georgetown, British Guiana, 220; Port of Spain, Trinidad (Gr. Br.), 360; La Guayra (Cacacas) Venezuela, 365; Port of Spain, Trinidad (Gr. Br.), 365. Total 4485 miles.



Underwood & Underwood.

Henry Ford and Col. John A. Paegelow, commander of army dirigible RS-1.

Fifth Division—Capt. Walcott P. Hayes, advance officer.—To St. George, Island of Grenada (Gr. Br.), 100; Kingstown, Island of St. Vincent, 85; Fort de France, Island of Martinique (Fr.), 100; Pointe-a-Pitre, Island of Guadeloupe (Fr.), 125. Total 410 miles. This is the shortest division but is entirely a water flight.

Sixth Division—First Licut. Ivan G. Mormon, advance officer.—To St. Thomas, Virgin Islands. 265; San Juan, Porto Rico, 80; Santo Domingo (Dominican Republic), 245; Port-au-Prince, Haiti, 210; Santiago de Cuba, 270; Manzanillo, Cuba, 175; Cienfuegos, Cuba, 250; Havana, Cuba. 145; Miami, Fla., 250; Jacksonville, Fla., 330; Savannah, Ga., 130; Wilmington, N. C., 255; Langley Field, Va., 200; Washington, D. C., 130. Total 2935 miles. The total distance of the entire flight is 18,535 miles.

#### ARMISTICE BANQUET

CULMINATING an impressive Air Day celebration the eighth annual national Armistice Night Banquet and Reunion of wartime flyers will be held Armistice night at the Hotel Astor, New York.

Already acceptances of invitations, broadcast by Aviators' Post, American Legion, under whose auspices the dinner will be held, are coming in from many sections of the country. Several noted airmen will fly to New York to participate in the Air Day demonstration. Among these are Major Tom Lanphier of Selfridge Field; Col. Paul Henderson, of National Air Transport, Chicago; Eddie Rickenbacker, Detroit and Elliott Springs of Fort Mill, South Carolina.

In view of the great success of last year's Armistice dinner, the Aviators' Post committee, headed by Capt. Rex Gilmartin, has this year arranged for an attendance double that of 1925 and it is confidently believed this will be the most successful and enthusiastic aviators' dinner ever held in New York. Tables will be allotted veterans of each flying field and air station and places may be reserved by addressing the banquet committee at Room 530, Fisk building, New York, N. Y.

#### FLIGHT TO PANAMA

THE radio equipment installed on the two PN-10 planes with which Llcut. Commander H. T. Bartlett and naval personnel will attempt a 1,789-mile non-stop flight from Hampton Roads, Va., to Colon, Canal Zone, will enable the flight commander to keep in touch with guard ships and shore radio stations the entire route.

The detailed route of the flight is as follows (distance in nautical miles): Hampton Roads to Cape Hatteras, 111; Cape Hatteras to Miani, 618; Miami to Alligator Key, 58; Alligator Key to Mariel, Cuba, 163; Mariel, Cuba, to Isle of Pines, 79; lsle of Pines to Old Providence Island, 505; and Old Providence Island to Colon, 255.

Five ships will be assigned to guard the route of the planes and assist them if necessary during the flight. Two ships will be on the route between Cape Hatteras and Miami, and three will be stationed between Isle of Pines and Colon.

Accompanying Lieut. Commander Bartlett, commander of the outfit, will be Lieut. B. J. Connell ,pilot, who was Comdr. Rodgers' pilot on the heroic but unsuccessful flight from San Diego to Hawaii; Lieut. L. W. Curtin, who only recently so narrowly escaped death in the disaster to the Fonck plane on its start on a transatlantic flight: Lieut. H. C. Rodd, radio officer and pilot. one of the members of the gallant crew of the NC-4 which under Comdr. A. C. Read made the successful transatlantic flight, and Lieut, C. H. Schildhauer, who holds the record for sustained flight having staved aloft for 28 hours and 45 minutes in a test flight of the PN9-1; Nelson M. Cooke and John Russell Roe, radiomen, first class.

#### DOOLITTLE RETURNS

L IEUT. DOOLITTLE, U. S. Air Corps, who has been demonstrating the Curtiss P.1 pursuit plane to the Chilean Government for several months, has returned with another feather in his cap of achievements, plus a crippled leg.

While in South America he fell and broke both legs—one of which has healed properly, but the other, we are sorry to hear, must be reset.

With both legs in plaster casts, his crutches attached to the gun mount, Lieutenant Doolittle flew across the continent from Santiago to Buenos Aires. He also flew over the snowcapped peaks of the Andes from Antefagasta, Chile to LaPaz, Bolivia, at an altitude of approximately 18,000 feet, in about six hours. This flight has been accomplished but once before in history. His plane performed perfectly.

Lieutenant Doolittle piloted the winning plane in the 1925 Schneider Cup Race making a world's record with a speed of 245.713 miles per hour.



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First Seaplane to Cross American Continent.



# THE DOUGLAS COMPANY

Santa Monica California



#### ARMY AND NAVY AIR SERVICE ORDERS

#### ARMY AIR CORPS ORDERS

THE following Army Air Corps orders have been issued as of the dates indicated in brackets:

THE following Army Air Corps orders have been issued as of the dates indicated in brackets:

Anderson, 2d Lt. Remsen Taylor, to Air Corps procurement planning representative. San Francisco, Calif., for training.

(Oct. 29)

Andrews, Maj. Frank M., is designated as commandant Air Ailvanced Flying School, Kelly Field, Tex., to Learn Capt. Rosenham, from Kelly Field, Tex., to Duncan Field, San Antonio, Tex. (Oct. 19)

Bender, Capt. Walter, from Fort San Houston, Tex., to Mitchel Field, N. Y.

Benton, 1st Lt. John W., order directing him to sail for Hawaiian Department, Oct. 28 is amended to February, 1927.

Berman, Capt. Morris, from office of Chief of Air Corps, to Fairfield, Ohio. (Sept. 29)

Blackburn, 1st Lt. Lloyd C., leave of absence, 2 days.

Blackburn, 1st Lt. Lloyd C., leave of absence, 2
days.
Bock, Maj. Paul T., order relieving him as assistant commandant Air Corps Technical School,
Chanute Field, Ill., is amended to relieve him
from duty, effective at such times as will enable
him to comply with order.
Bradshaw, Warrant Officer Leland, from Langley
Field, Va., to Chanute Field, Ill. (Oct. 1)
Browne, Maj. Charles J., orders amended to direct him to Langley Field, Va., on completion
of foreign tour of service. (Oct. 15)
Bruner, 1st Lt. Donald M., from McCook Field,
Ohio, to Philippine Department. (Oct. 2)
Burnside, Maj. Morris Claihourne, from Detroit,
Mich., to Air Corps procurement planning representative, Detroit, for training. (Oct. 15)
Chennault, 1st Lt. Claire L., leave of absence, 3
months. (Oct. 5)
Corkville, 1st Lt. John D., leave of absence ex-

Chennault, 1st Lt. Claire L., leave of absence, 5 months.

(Oct. 5)
Corkyille, 1st Lt. John D., leave of absence extended 24 days.

Connelly, Capt. Louis Stoker (Reserve), to McCook Field, Dayton, Obio, for training. (Oct. 15)
Davidson, 1st Lt. Rifus B., from Georgia School of Technology to Canal Zone.

(Oct. 12)
Davis, Capt. John Jay (Reserve) from Oshkosh, Wis., to Chicago, Ill., for training.

(Oct. 15)
Drake, 1st Lt. Alonzo M., from duty in office of Chief of Air Corps, to McCook Field, Dayton, Ohio.

Eagle, Capt. Aubrey I., from foreign service, to 12th Observation Squadron, Fort Sam Houston, Tex.

from foreign tour to Middlectown Air Intermediate Depot, Pa., instead of Marshall Field. Kans.

Hicks, Lt. Col. George L., Adjutant General, order assigning him to duty at Air Corps training Center, San Antonio, Tex., revoked. (Oct. 14) Hickey, Capt. Lawrence P., from Chanute Field, Ill., to Philippine Department. (Oct. 2) Holland, 1st Lt. Park, from Kelly Field, Tex., to Pbilippine Islands. Holland, 1st Lt. Park, from Kelly Field, Tex., to Philippine Islands. (Oct. 20) Horton, 1st Lt. Clarence F., order directing him to sail March 2, 1927, for Canal Zone amended to read April 1, 1927.

Johnson, Pvt. Herbert C., from Langley Field, Va., to Camp Holabird, Md. Jones, Maj. Junius W., from service in Panama Canal Department, to Langley Field, Va., to Camp Holabird C., from Mitchel Field, N. Y., to Canal Zone.

Kimble, 1st Lt. Frederick Von H., from foreign service, to Selfridge Field, Mich. (Oct. 20) King, 2d Lt. Harold C., from Mitchel Field, N. Y., to Canal Zone.

Kimble, 1st Lt. Frederick Von H., from foreign service, to Selfridge Field, Mich. (Oct. 20) King, 2d Lt. Harold C., from Mitchel Field, N. Y., to Canal Zone.

Kimble, 1st Lt. Edmund C., from foreign service, to 2elth Observation Squadron, Fort Sam Houston, Tex.

Langmead, 1st Lt. Edmund C., from office of Chief of Chief of New York City, for training. (Oct. 15) Langmead, 1st Lt. Ledmund C., from office of Chief of Chief of New York City, for training. (Oct. 14) McConnell, 1st Lt. Adolphus R., from Langley Field, Va., to Marshall Field, Fort Riley, Kans. Pried, Va., to Marshall Field, Fort Riley, Kans. Pried, Va., to Marshall Field, Fort Riley, Kans. Marshall Field, Fort Riley, Kans. Marshall Field, Fort Riley, Kans. Warshall Field, Fort Riley, Kans. Marshall Field, Fort Riley, Kans. Warshall Field, Fort Riley, Kans. Warshall Field, Fort Riley, Kans. Warshall Field, Fort Riley, Kans. Marshall Field, Fort Riley, Kans. Warshall Field, Fort Riley, Kans. Warshall Field, Fort Riley, Kans. Warshall Field, Fort Riley, Kans.

aitland, 1st Lt. Lester J., from Wright Field Olifo, to duty in office of Assistant Secretary (War.

Melroy. 1st Lt. Vincent J., from Nashville. Tenn to Philippine Department. (Oct. 8

Menz, Warrant Officer James, from Canal Zone to

Menz, Warrant Officer James, from Canal Zone to Fort Crockett, Tex. (Oct. 5)
Mills, 1st Ll. Samuel P., from foreign service, to McCook Field, Ohio. (Oct. 2)
Montgomery, 1st Ll. Harry G., relieved from duty in office of Chief of Air Corps and directed to Fairfield, Ohio, for duty.
Mousseau des Islets, 2d Ll. Robert Eugene, transferred to Corps of Engineers, effective Sept. 28, 1926, and will report at Fort Sam Houston, Tex.

1926, and will report at Fort Sam Houston, Tex.

Murphy, Capt. Thomas Archihald (Specialist Reserves), from Ogdenburg, N. Y., to Buffalo, N. Y., for service in Air Corps.

Neuhauer, Maj. Charles Martin (Reserve), Rev. York, N. Y., to office of Assistant Secretary of War, for training in procurement activities.

(Oct. 22)

York, N. Y., to office of Assistant Secretary of War, for training in procurement activities.

Oct. 22)

Perrin, 1st Lt. Elmer D., from Brooks Field, Tex., to Philippine Islands.

Pierce, 1st Sgt. Samuel L., Brooks Field, Tex., retired.

Raymond, Staff Sgt. George B., from Kelly Field, Tex., to Fort Crockett, Tex.

Redman, 1st Lt. Mark H., from foreign service, to Air Intermediate Depot, Fairfield, Ohio. (Oct. 2)

Reinhurg, Maj. George E., from Chanute Field, Ill., to Omaha, Nebr.

Nebertson, Capt. Paul Swan, from Detroit, Mich., to Air Corps procurement planning representative, Detroit, for training.

(Oct. 15)

Ryan, 2d Lt. Russell S., from Schenectady, N. Y., to Fairfield, Ohio.

Salter, Staff Sgt. Joseph E., 99th Ohservation Squadron, Bolling Field, D. C., transferred to 47th School Sqd., Brooks Field, Tex., to 51st Coast Artillery, Fort Eusits, Va.

(Oct. 13)

Schofield, 1st Lt. Earl S., from Scott Field, Tex., to Langley Field, Va.

Field, Tex., to 51st Coast Artillery, Fort Eustis, Va.
Schofield, 1st Lt. Earl S., from Scott Field, Tex., to Langley Field, Va.
(Oct. 13)
Schofield, 1st Lt. Earl S., from Scott Field, Tex., to Langley Field, Va.
(Oct. 13)
Shakespeare, Pyt. Thomas, from Fort Crockett, Tex., to Selfridge Field, Mich.
(Sept. 30)
Simms, Staff Sgt. Fred., 47th School Squadron, Brooks Field, Tex., transferred to 99th Observation Squadron, Bolling Field, D. C. (Oct. 22)
Sims, 2d Lt. Turner Ashby, Ir., transferred to Corps of Engineers, effective Sept. 28, 1926, and will report at Fort Sam Houston, Tex. (Oct. 12)
From Fort Sam Houston, Tex., to Brooks Field, Tex., for training.
(Oct. 12)
Skiner, 2d Lt. Leslie A., from Scott Field, Ill., to Langley Field, Va.
(Oct. 1)
Spry, 2d Lt. James W., from foreign service, to Third Attack Group, Fort Crockett, Tex.

Stevens, Capt. Allert W., from foreign service, to Section, Fairfield, Ohio, to McCook Field, Ohio, to Panama Canal Zone. (Oct. 26)
Stewart, 1st Lt. Clarence N., from Fairfield, Obio, to Panama Canal Zone. (Oct. 27)
Stewart, 1st Lt. Malcolm N., from Fairfield, Ohio, to Panama Canal Zone. (Oct. 28)
Stewart, 1st Lt. Malcolm N., from Fairfield, Ohio, to Panama Canal Zone. (Oct. 29)
Stover, Capt. Porter Shiptor, Beverley Hills, Calif., to Rockwell Field, Calif. (Oct. 15)
Stover, Capt. Forter Shiptor, Beverley Hills, Calif., to Rockwell Field, Calif. (Oct. 17)
Theiss, Capt. Edgar Raymond (Reserve) to Air Corps procurement of Corp. 18, for training representative, Chicap, Ill., for training representative, Chicap, Ill., for training, from foreign service, to 12th Observation Squadron, Fort Sam Houston, Tex.
Tolchan, 1st Lt. Arthur, from foreign service, to 12th Observation Squadron, Fort Sam Houston, Tex.
Tonkin, 1st Lt. Lexander (Reserve), from Cleve land, Ohio, to Fairfield, Ohio, for training at Air Intermediate Depot.
Tonkin, 1st Lt. Earle H., from duty in office of the Chief of the Air Corps, to Material Division, McCook Field, Dayton, Ohio.
Tooker, 1st Lt. Bernard J., leave of absence the Chief of the Air Corps, to Material Division, McCook Field, Dayton, Ohio.
Tooker, 1st Lt. Stanley, M., from foreign service, to Mitchel Field, N. (Oct. 29)
Usned Institute of the Air Corps, to Material is instructor New York National Guard, New York City, to Philippine Islands. (Oct. 29)
Usned Capt. George L., from detail as instructor New York National Guard, New York City, to Philippine Islands. (Oct. 29)
Vandenburg, 2d Lt. Gordon Tarbell, resignation accepted.
Walsb, Capt. Robert L., order relieving him from duty at Fort Crockett, Tex., and directing him to Langley Field, Va., is revoked.
Weaver, 1st Sgt. James B., Kelly Field, Tex., retired. (Oct. 9)

ing him to Langley Field, Va., is revoked.

Weaver, 1st Sgt. James B., Kelly Field, Tex., retired.

Wells, 1st Lt. Harold R., from Mitchel Field, to Philippine Islands.

Williams, 1st Lt. John F., leave of absence extended 10 days.

Williams, 1st Lt. Arthur William (Reserve), from West Palm Beach, Fla., to Mitchel Field, L. I.

Williams, Pyt. Andrew, from Selfridge Field, Mich., to Fort Crockett, Tex.

(Sept. 30)

Williams, Pvt. Andrew, from Selfridge Field, Mich., to Fort Crockett, Tex.
Woolsey, Capt. Clinton F., order directing him from McCook Field, Ohio, to Panama Canal Zone, revoked. (Oct. 12). To Hawaiian Department.
Wriston, 1st. Lt., Roscoe C., from Fort Sam Houston, Tex., to Kelly Field, Tex.
Young, Capt. Louis McComas (Reserve). from Long Branch, N. J., to McCook Field, Dayton, Ohio.
Zane, 1st. Lt. Robert T., from service in Panama Canal Department, to Kelly Field, Tex. (Oct. 2)

#### NAVY AIR SERVICE ORDERS

THE following Navy Air orders have been is sued as of the dates indicated in hrackets:
Abel, Ch. Mach. Edwin W., detached U.S.S. Mallard, to c.f.o. U.S.S. Lexington (Oct. 1)
Allison, Lt. (j.g.) William C., detached VF Squadron, Aircraft Squadrons, Battle Fleet, to Naval
Air Station, Pearl Harbor, T. II. (Oct. 2)
Baillie, Ensign Roland V., detached Naval Air
Station, Pensacola, Fla., to U.S.S. Charles Ausburn.

(Sept. 25)

Air Station, Pearl Harbor, T. II. (Oct. 2)
Baillee, Ensign Rolland V., detached Naval Air
Station, Pensacola, Fla., to U.S.S. Charles Ansburn.
Baker, Lt. Joseph W. (D.C.), detached Paval
Training Station, Naval Operating Base, Hampton Roads, Va., to Naval Air Station, Naval Operating Base, Hampton Roads, Va. (Oct. 18)
Bartlett, Lt. Comdr. Harold T., detached Naval
Air Station, Pensacola, Fla., to Bureau of Aeronautics, Navy Department, and additional duty
fitting our FN-10 planes. (Sept. 20) Detached
Fourth Naval District, Philadelphia, Pa., to command Scouting Squadron 2 (VS-2) Aircraft
Squadrons, Battle Fleet.
Bernhard, Lt. Comdr. Alva D., detached command
U.S.S. Litchield, to temporary duty, Naval Air
Station, Pensacola, Fla.
Bradley, Conndr. Willis W., Jr., detached Rec.
Bks., Hampton Roads, Va., to Naval Air Station,
Pensacola, Fla.
Brow, Lt. Harold J., detached Naval Air Station,
Pensacola, Fla.
Brow, Lt. Harold J., detached Naval Air Station,
Pensacola, Fla., to Naval Air Station,
Pensacola, Fla., to Naval Air Station,
Pensacola, Fla., to Naval Air Station,
Air Station, Pensacola, Fla., to Naval Air Station,
Air Station, Hampton Roads, Va. (Oct. 12)
Cocke, Capt. Herbert C., detached command Naval
Air Station, Pensacola, Fla., to temporary duty Naval
Air Station, Pensacola, Fla., orders Oct. 1, modified.
Conneton, Lt. James P., to temporary duty Naval
Air Station, Pensacola, Fla., to U.S.S. Lexington.
Coct. 25), Aircraft Squadrons, Battle Fleet. (Oct. 12)
Conpton, Lt. James P., to temporary duty Naval
Air Station, Pensacola, Fla., to U.S.S. Reno.
Cit. 140
Capchard, Lt. Leyron J., detached Bureau of Aeronautics, to duty with Squadron 2 (VS-2), Aircraft Squadrons, Battle Fleet. (Oct. 14)
Capchard, Lt. Lewrence W., detached c.f.o. PN10
planes, to duty with Squadron 2 (VS-2), Aircraft Squadrons, Battle Fleet. (Oct. 14)
Cennett, Lt. Comdr. Ralph F. detached c.f.o.

(Sept. 23)
Curtin, Lt. Lawrence W., detached c.f.o. PN-10
planes, to duty with Squadron 2 (VS-2), Aircraft Squadrons, Battle Fleet. (Oct. 11)
Dennett, Lt. Comdr. Ralph E., detached office,
Naval Operations, Navy Department, to temporary duty Naval Air Station, Pensacola, Fla.

Naval Operations, Navy Department, to temporary duty Naval Air Station, Pensacola, Fla. (Oct. 13)

Dill, Lt. George T., (M.C.), detached Naval Air Station, Pensacola, Fla., to duty with 1st Brigade, U.S. Marines.

Doyle, Lt. Comdr. Robert M., detached Bureau of Navigation, Navy Department, to c.f.o. U.S.S. Lexington.

Farnsworth, Lt. George O., detached Navy Yard, Washington, to c.f.o. U.S.S. Saratoga. (Oct. 12)

Fulton, Condr. Garland (C.C.), detached Naval Air Station, Lakehurst, N. J., to Bureau of Aeronautics.

Gilmore, Lt. Walter W. (D.C.), detached U.S.S. Camden, to Naval Air Station, Pensacola, Fla. (Oct. 18)

Groh, Ch. Bosn. George R., detached Naval Air Station, Naval Operating Base, Hampton Roads, Va. to c.f.o. U.S.S. Lexington.

(Oct. 14)

Holcombe, Lt. Benjamin R., detached Bureau of Aeronautics, to U.S.S. Robert Smith. (Oct. 18)

Johnson, Lt. Charles M., detached Naval Air Station, Rockaway Beach, Long Island, N. Y. to U.S.S. Bridge.

Jones, Mach. Walter R., detached Navy Yard, Washington, D. C., to c.f.o. U.S.S. Lexington.

Krans, Comdr. Sydney M., detached Naval Air Station, Lakehurst, X. J., to Bureau of Aeronautics.

Cott. 18)

Keith, Lt. Stanley (i.g.), orders Sept. 3, 1926, modified, detached Third, Naval District to Naval

Kraus, Comdr. Sydney M., detached Naval Air Station, Lakehurst, X. J., to Bureau of Aeronantics.

Leith, Lt. Stanley (i.g.), orders Sept. 3, 1926, modified, detached Third Naval District to Naval Air Station, Pensacola, Fla. (Oct. 14)

Lind, Lt. Comdr. Wallace L., detached U.S.S. Arizona, to temporary duty Naval Air Station, Pensacola, Fla.

Lonnequest, Lt. Theodore C., detached VO Squadron 1, Aircraft Squadrons, Battle Fleet, to engineer officer on staff Aircraft Squadrons, Battle Fleet, Comdr. Francis M., detached (Sept. 28)

Maide, Lt. Comdr. Francis M., detached (Sept. 28)

Work Squadron 1, Aircraft Squadrons, Battle Fleet, to command VO Squadrons, Battle Fleet, Naide, Lt. Comdr. Francis M., detached Command VO Squadrons, Battle Fleet, Nayer, Lt. Roland G. (C.C.) detached Naval Air Station, Lakehurst, N. J., to U.S.S. Los Angeles, O'Neill, Ch. Mach, James E., detached office Naval Air Station, Lakehurst, N. J., to U.S.S. Los Angeles, O'Neill, Ch. Mach, James E., detached office Naval Air Station, Ensign Alhert N., orders Aug. 21, 1926, modified, to Naval Air Station, Pensacola, Fla., to U.S.S. Colorado, Deterson, Lt. (j.g.), John V., detached VJ Squadron 1, Aircraft Squadrons, Battle Fleet, to U.S.S. Colorado, Plan, to U.S.S. Milwaukec, Oct. 13)

Peterson, Lt. (j.g.), John V., detached VJ Squadron, Lt. Leverene A., detached U.S.S. Saratoga, to C.f.o. U.S.S. Lexington.

Pensacola, Fla., to U.S.S. Milwaukec, Oct. 18)

Pride, Lt. Alfred M., detached U.S.S. Saratoga, to C.f.o. U.S.S. Lexington.

(Continued on page 401)

### ANTHONY HERMAN GERARD FOKKER

NE of the pioneers of the airplane industry, Mr. Fokker, whose interest in airplanes and flying dates back to his boyhood days,

has made many and highly valuable contributions to the development of flying and flying machines. A designer of originality and daring, an inventor of extraordinary technical skill and vision, and possessing unshakable faith in the present and future possibilities of aviation, he turned, very early in his career, his attention to the practical application of his talents, the manufacture of airplanes on a large scale for com-

mercial purposes. In this field he has become a leading figure, both in Europe and in the United States, while Fokker airplanes have become known the world over for their achievements, safety, durability and the impressive total of flights made, miles covered and passengers and freight carried, safely, swiftly and regularly. To enumerate in detail all that has been accomplished by Mr. Fokker and by Fokker aircraft or to give a complete list of the contests won and the records established by them, would mean little less than to write a history of aviation during the last decade and a half.

Anthony Herman Gerard Fokker was born, April 6, 1890, at Kediri, a town on the island of Java, a colony of the Netherlands in the Malay Archipelago, a son of Herman and Anna (Diemont) Fokker. His father was a wealthy owner of coffee plantations in Java and, in 1896, retired with his family to his residence at Haarlem, Holland, where he continued to make his home. There Mr. Fokker attended school, but his intense interest in mechanics soon put a stop to his formal education. With the greatest interest and a remarkable grasp for one of his tender age he followed the early experiments in aviation of the Wright brothers and the French inventors of that period, and by deep study and continuous tests of designs from his own plans, he was able to build model airplanes

possessing qualities of automatic stability. His first airplane, the "Spider" monoplane, constructed in 1911 almost entirely by himself and on which he taught himself to fly, created a sensation and won the Russian Military Competition held at St. Petersburg in 1912. This and other demonstrations of the qualities of this machine brought him a number of orders and, undismaved by the technical and financial

Airplane Designer, Inventor, Manufacturer



1911-Fokker in his first airplane, the "Spider" monoplane.

difficulties which faced him, he began the manufacture of airplanes on a commercial basis. Without interruption he has been engaged in this field since

then, always at the head of his own business and with a success that even Mr. Fokker himself might have considered fanciful at the time of his entrance into business. At about this time one of his airplanes made a flight from Berlin to The Hague, which stimulated the interest of the German Government, but his home Government, not then realizing the potential importance of airplanes, gave him no encouragement.

During the Aero Show at London in 1912 he offered his machines to the British Government, but there, too, he found no support. Shortly afterwards the German Government made a three-year contract with Mr. Fokker for the instruction of military pupils, and a school was established at Schwerin. With this contract his business was placed on a paying basis and during the World War it developed enormously. As the exploits of the Fokker planes, used by the German armies, increased in number and audacity, Mr. Fokker's fame spread quickly. It was during this period that he invented a synchronizing gear, making it possible to shoot with machine guns between revolving propeller blades, and he manufactured 42,000 of these for the German armies. Since then the basic principle of this remarkable invention of Mr. Fokker's has been employed on the airplanes of the armies and navies of practically all countries. In spite of his commercial connection with the German Government during the World War, he resisted all efforts to force him to accept German nationality and retained his allegiance to his native country.

The Armistice and the revolution in Germany threatened for a time to destroy all the results of Mr. Fokker's work, but he succeeded in transferring much of his material and most of his invaluable data to his native country. There he established the Netherlands Aircraft Manufacturing

Company, with a large plant at Amsterdam, owned and directed by Mr. Fokker. This enterprise has also been eminently successful. Forty-five different types have been produced, including monoplanes, biplanes and triplanes. pursuit planes, observation planes, bombing planes and torpedo planes, many of these being both land and seaplanes, amphibians and flying boats, and com-(Continued on p. 391)



1925-Fokker still on the job. The latest Fokker VII "Trimotor."



# HISTORY of FOKKER AIRPLANES

POR many years Fokker aircraft, both of military and commercial type, have occupied an enviable position in the foremost ranks of the world's aircraft. In the history of aviation they have many notable achievements to their credit, and in the course of their many millions of miles of operation for all purposes, their reputation for safety, reliability and all around efficiency under all conditions has been maintained in many parts of the world.

While a number of spectacular flights, such as that of Commander Byrd to the North Pole, and the earlier records of Kelly and Macready, including their still unbeaten non-stop flight from Coast to Coast, have again and again provided headlines to draw the public attention to the Fokker planes, their leadership has been most marked in the field of actual continuous service. In the early days of aviation,

before the war, Mr. Fokker was laying the foundation for the standardization of inherent stability and perfect flying qualities, for which his planes are famous to this day.

In the successive new and constantly improved commercial Fokkers, which followed the old Fokker F-II of 1920, the principle of commercial utility has been strictly maintained as the cardinal point in their design. Of their success there is no better proof than the operating record for the airlines which use Fokker planes. For safety and reliable operation under the extremely unfavorable weather conditions encountered in that part of the world, no operating company has a better record than the Dutch K. L. M. airlines who run daily services between London-Amsterdam, Amsterdam-Paris, and Amsterdam-Copenhagen, using Fokker planes exclusively ever since their start in business 6 years ago. On the basis of this success a number of other lines took Fokker planes as standard equipment, invariably to their satisfaction; they are among those with the best reputation among air travelers.

With the transfer of Mr. Fokker's activities to the United States, American built and still further developed Fokker planes became available for the encouraging development of commercial aviation which has taken place in this country during the past two years, and the same satisfactory results are now attending their operation by their purchasers including such enterprises as Colonial Air Transport, Philadelphia Rapid Transit Air Service and others.

Fokker planes are built by the Atlantic Aircraft Corpora-

tion at its factory at Teterboro Airport, Hasbrouck Heights, N. J., about six miles from New York City. This corporation, the result of the collaboration effected by Mr. Fokker with prominent American engineers and capitalists, took over the old Witteman Aircraft plant at Teterboro in the spring of 1924, and has turned this completely equipped plant, originally specially built for aircraft manufacture, into a veritable hive of industry. Although the company's principal production is the Fokker commercial planes, of the Trimotor and Universal types, it has also been entrusted by the Government with a number of contracts, among which was the remodelling of DH planes for the Air Corps by substitution of a modern,



An air view of the Fokker plant,—a group of workers in front of Byrd's Polar plane and a view of one corner of the assembly department.

steel tube fuselage of the type of construction developed by Mr. Fokker, with modern equipment and installations. Following the successful demonstration and tests made at McCook Field with the Fokker three-engined monoplane with which the flight to the North Pole was made, the Government also ordered several of these planes to be equipped as Army transports, and further entrusted the Atlantic Aircraft Corporation with several experimental projects. The development of commercial air transportation, however, has provided the Atlantic Aircraft Corporation and the later formed Fokker Aircraft Corporation with a far greater proportion of its business which is rapidly increasing.

Under Mr. Fokker's personal direction, and often with his own hands on the controls of the ships, the Fokker Aircraft Corporation is active in assisting the development of public interest and support in commercial aviation. The Fokker Trimotor, fitted with three Wright Whirlwind engines, in particular, had done a great deal to interest the support of the country's financial powers in aviation. demonstrated the fact that high load carrying planes, with passenger accommodation equal to that

of the best land transport vehicles, can be designed so as to continue their way in safety, even if one of the engine fails, and can even seek a safe landing place within a considerable area, should the almost inconceivable failure of two engines out of three occur. This had the definite effect of increasing the public's confidence in the airplane as a vehicle for

passenger transportation.

The Trimotor started its career by arriving ahead of all other competitors and with a perfect score in the Ford Reliability Tour of 1925, with Mr. Fokker on board. Subsequently, a demonstration tour was made, visiting 28 cities in the United States, including a trip from New York, through Florida, to Havana, Cuba and return. The active and most valuable interest of the Philadelphia Rapid Transit Company, the first established transport organization to take up aviation as an extension of its business, is directly traceable to the development of the Fokker Trimotor. This company's successful passenger, mail and express service between Philadelphia-Washington, D. C.-Norfolk, Va., started as an experiment on July 16, 1926. To date it has carried nearly 3,000 passengers with regularity, safety, and in such comfort as had never previously been realized in transportation by airplane. Three Fokker Trimotor planes, each equipped with three Wright Whirlwind engines, maintain on this service a schedule of three round trips per day between Philadelphia and Washington and one round trip per day between Washington and Norfolk.

Colonial Air Transport, Inc. uses Fokker single engined Universal planes on the New York-Boston air mail route, and has placed an order with the Atlantic Aircraft Corporation for Trimotor planes with the object of extending its business over greater distances and to the carriage of passengers and express. A noteworthy user of a Fokker Trimotor plane is the Continental Motors Corporation of Detroit, Michigan, who find the use of such a ship of the greatest value to the corporation's president, Mr. R. W. Judson, and their executives and customers in maintaining closer and more rapid contact between their various centers of business.

For the arduous work of arctic exploration, Fokker Trimotors built by the Atlantic Aircraft Corporation were the choice of both the Detroit Arctic Expedition under the com-

mand of Capt. G. H. Wilkins, and the historic, successful expedition to the North Pole headed by Commander R. E. Byrd.

For those who are not familiar with the Fokker Trimotor and Fokker Universal, the following brief description is given:

The Trimotor is a monoplane, following the well known and successful Fokker constructive principles of steel tube fuselage and control surfaces, combined with a thick wing of rugged wood structure and 3-ply wood covered.

The accommodation for 8-10 passengers, in a spacious cabin in which a man may walk upright, and fitted with every convenience in the way of sliding windows, ventilation, heating installation, toilet, baggage compartments, etc., is most comfortable. The two pilots' seats are placed forward of and higher than the cabin in a position where, although not totally enclosed, the protection from the elements, and the view are unusually good. The three Wright Whirlwind engines, of which any two are sufficient for flight with full load, while one can keep the ship in the air with somewhat less than full load, are located in the nose of the fuselage, and on simple steel mountings under the wing on either side. Fuel and oil systems, controls, and all other parts are of the simplest and most effective design for continuous commercial use with a minimum of maintenance attention. The safe flying qualities, for which Fokker ships are noteworthy, are present to an exceptional degree in the Trimotor. The demonstrations which have been made of its striking characteristics of sinking on an even keel when stalled in the air, instead of diving or spinning, and of its perfect control at all speeds even below stalling, have been the subject of much favorable comment in the aviation world. It is these qualities particularly which have given the Fokker planes a reputation of most exceptional safety. The Trimotor, in spite of the disposable load of 4,000 lbs. which it carries, has a high performance, the full speed being 125 m. p. h. and the climb off the ground 750 feet in one minute, with a ceiling of around 16,000 feet.

The Fokker Universal is a small and neat monoplane, fitted with a single Wright (Continued on page 390)



One of the Fokker Universal planes used on the Colonial Air Transport line.



The first airplane to fly to the North Pole—Commander Byrd's FOKKER Trimotor 10 passenger airliner. (Three Wright Whirlwind engines).

FOKKER airplanes fly more than 10,000 miles per day in regular commercial service. The experience so gained is incorporated in the FOKKER planes you buy today.

All over the world the name FOKKER is known as a synonym for reliability, safety and efficiency in aircraft. This reputation is the purchasers' most powerful guarantee. Some of America's greatest industrial and transport organizations have recognized this fact and operate FOKKER airplanes exclusively in their air services.

Among American purchasers of FOKKER commercial aircraft in 1926 are the U. S. Government—Byrd Arctic Expedition—Detroit Arctic Expedition—Continental Motors Corporation—Philadelphia Rapid Transit Company—Colonial Air Transport, Inc.—Northwest Airlines, Inc., Seattle—Central Canada Airlines, Ltd.

#### FOKKER AIRCRAFT CORPORATION

New York Office
110 East 42nd STREET, NEW YORK CITY
Phone Ashland 9195 - Cable "Fokplanes," N. Y.

#### ATLANTIC AIRCRAFT CORPORATION

Factory and Flying Field
TETERBORO AIRPORT
HASBROUCK HEIGHTS, NEW JERSEY
Phone Hasbrouck Heights 510—Cable "Atlair" Hackensack, N.J.

# A few Achievements of FOKKER Planes:

Five world's records, made in one non-stop flight of 37 hours, 5 minutes; Lieuts. Kelly and Macready, April, 1923.

The only non-stop flight across the American continent: New York to San Diego, in 26 hours; this flight made by Lieuts. Kelly and Macready, May, 1923.

Winner Liberty Engine Builders Trophy Race, 139 m. p. h.; pilot, Lt. McMullen, St. Louis, October, 1923.

World's record for altitude with 500 kilos payload, 21,250 feet; pilot, Ballod, Argentine, February, 1924.

Holland to the Dutch East Indies with a 10-passenger plane, 9,850 miles in 20 flying days; pilots, Van den Hoop and Poelman, November, 1924.

Four world's records for speed: distance 100 and 200 kilometers with 250 and 500 kilos payload; pilot, Grase, Holland, June, 1925.

Two world's records for load carrying: 3 hours 3 minutes with 1000 kilos and 1500 kilos payload; pilot, Grase, Holland, September, 1925.

Arrived first, with perfect score, carrying 9 passengers and baggage, Ford Reliability Tour, 1925; pilot, E. P. Lott.

Tokio, Japan—Copenhagen, Denmark, 6500 miles in 9 consecutive days; Pilot Lt. Botved, Danish Army, June, 1926.

The first and only flight to the North Pole by airplane; Commander Byrd and Pilot Bennett, May, 1926.

Nearly 5 million miles in regular commercial airline operation with a record for safety and economy not approached by any other airplane.



The FOKKER "Universal" 5 passenger monoplane with a 200 h. p. Wright "Whirlwind" engine, used for air mail and general commercial services, in flight over Los Angeles, Cal.

Fokker Universal and Fokker Trimotor planes carry the air mail daily between New York and Boston and passengers, air mail and express daily between Philadelphia, Washington and Norfolk.

Say you saw it in AERO DIGEST

# NOW

# FOKKER AIRCRAFT

ARE USING

# SAUZEDDE WHEELAND BRAKE UNITS

#### A PIONEER DEVELOPMENT

The Sauzedde Wheel and Brake unit has been designed to meet the problems peculiar to the airplane. By arranging the controls so that each brake can be operated individually or together the pilot is enabled to steer his ship on the ground without the aid of a mechanic. It is the biggest factor in making an airplane a one-man vehicle.



Realizing the dependence the pilot must place on his wheels when landing, the Sauzedde Unit is built from materials of the finest quality. Alloys have been used wherever possible in order to secure the maximum strength with the least weight. The weight of the wheel and brake is little more than that of the standard wheel alone.

#### SAUZEDDE

#### FEATURES

Three rows of spokes to hub.

Greater strength for side loads.

Greater strength for lateral loads.

Tangential spokes to sustain torque load.

Self contained unit.

Brake is inside rim of wheel.

Brake internal expanding type.

Protection from dirt, water and ice.

Double servo action.

Self-centering and self-energizing.

Alloy drum and shoes with cast-iron liner.

Extremely light in weight.

Eliminates mechanic for ground maneuvering.

Eliminates wheel chocks.

Reduces ground roll 60% after landing.

Increased safety.

The Sauzedde Unit is designed so that it is interchangeable with the present government standard wheels, using either plain bearing or combination ball and roller bearing.

Further information and prices gladly furnished on request

# SAUZEDDE CORPORATION

Detroit, Michigan

### GOODYEAR AIRPLANE TIRES, OF COURSE



The Philadelphia Rapid Transit Airplane WILBUR is carried on Goodyear Airplane Tires

SIX times or more each day, as the good ship *Wilbur* of the Washington-Philadelphia-Norfolk air line sets down her cargoes, Goodyear Airplane Tires float the big plane easily, gently, and safely to a full stop.

And at every takeoff, as she sprints across the fields to catch the air, these Goodyear Tires roll nimbly and smoothly under this big Fokker carrier that is daily demonstrating the practicability of aerial transportation.

In equipping their ships with Goodyear Airplane Tires, Fokker and the Atlantic Aircraft Corporation recognize the ability of Goodyear to keep pace with the latest developments in aviation.

Goodyear makes everything in rubber for the airplane, knowing well just how these products must serve and just how to compound and fashion rubber that will be efficient, long-wearing, and above all, safe.

Aeronautics Department

THE GOODYEAR TIRE & RUBBER COMPANY, INC., AKRON, OHIO



AIRPLANE TIRES
Say you saw it in AERO DIGEST

# MEYROWITZ LUXOR GOGGLES

are worn by many pilots of FOKKER Universal commercial planes

Pilot Wm. DeWald and other experienced commercial pilots who fly Fokker aircraft wear Meyrowitz

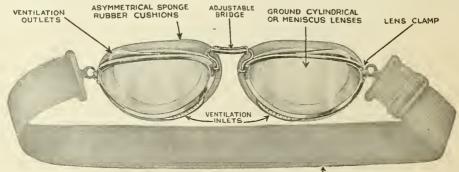
#### **LUXOR**

Goggles. Airmen who fly daily carrying passengers, freight and mail over the American airways realize fully the importance of complete eye protection and comfort. That is why they wear the



# NUMBER 6 U.S. AIR SERVICE MODEL

ORIGINATED AND MANUFACTURED EXCLUSIVELY BY E. B. MEYROWITZ



EXTRA WIDE CONTINUOUS HEAD BAND

#### U. S. Air Service Model 6

With ground polished and cylin-			
drical bent white lenses \$10.75			
With ground polished and cylin-			
drical bent amber and euphos			
(green) tinted lenses 12.75			
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lenses 15.00			
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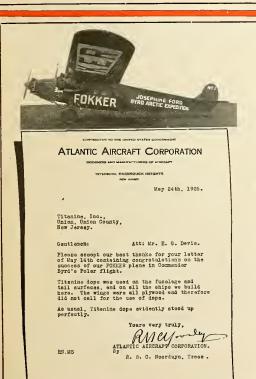
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"It is almost needless to say that we find your Moto Me-ters thoroughly satisfactory and deserving the reputa-tion they have in the public mind generally."

R. B. C. NOORDUYN, Atlantic Aircraft Corp.





Commander Byrd's Airplane, first to fly over the North Pole

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15 Park Row

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#### HISTORY OF FOKKER AIRPLANES

(Concluded from page 379)

Whirlwind engine and accommodating four passengers with baggage in a comfortable and well fitted out The position of the pilot's seat, well screened but not enclosed, gives unusually extensive visibility under all weather conditions. The features of steel tube fuselage and wood-covered wing, are of course retained in the Universal, and the ship also possesses the flying qualities described above to a high degree. struction is simple and rugged. With a disposable load of 1500 lbs. the Universal has a quick take-off, a high speed of 120 m.p.h., climb to 10,000 feet in 21 minutes and a ceiling of 14,000 feet.

Adjacent to the factory of the Atlantic Aircraft Corporation at Hasbrouck Heights, N. J., is the Teterboro Airport, the nearest flying field to New York City. Its location within 7 miles from Times Square places it in a most favorable situation for development as the New York terminal airport. Over 800 acres of flat land are available. More than 200 acres, of which a considerable part has been levelled and drained and is regularly used as a flying field by all types of aircraft, is under development by Teterboro Airport, Incorporated, organized for this purpose by the Atlantic Aircraft Corporation, Wright Aeronautical Corporation and the Riser Land Company.

The field is adjacent to the Erie railroad, ten miles from Jersey City, and convenient shipping facilities are provided. A passenger station also adjoins the field and Williams Avenue, a main automobile thoroughfare to New York runs along the northeastern boundary of the property, separating it from the grounds of the Teterboro Golf Club.

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are used on Fokker commercial aircraft. We are specialists in heavy bronze castings, standard or special alloys made to specifications for aircraft and aircraft engine manufacturers.

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Manufacturers of Columbian propellers—the wheels that win

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#### ANTHONY H. G. FOKKER

(Concluded from page 377)

mercial craft ranging from large airliners to small sport planes.

Governmental and commercial organizations of 14 nations are among the purchasers of Fokker aircraft during the past six years, several of them in large quantities. After the war, Mr. Fokker was one of the first to build a special type of airplane for commercial transportation, based on the principle which is vital to all transportation: that of carrying the greatest possible load over the greatest possible distance, at the desired speed, for the smallest possible expenditure of money. This was in 1919. In the years following, fleets of Fokker commercial airplanes were built and delivered to the regular transportation lines which developed in the principal European countries.

In 1925 Fokker aircraft were used as standard equipment by the following regular European lines: Amsterdam to London, Rotterdam to Bremen, Hamburg and Copenhagen, Amsterdam to Brussels and Paris, Copenhagen to Hamburg and Amsterdam, Dantzig to Koenigsberg and Reval, Vienna to Budapest, Koenigsberg to Smolensk and Moscow, and several German lines. The total traffic of these during 1925 represented: passengers transported,

43,365; mail and freight transported, 1,450,000 lbs.; distance flown, 1,-992,000 miles. Fokker airplanes at the present time in operation cover a distance of over 10,000 miles daily, while the total mileage they have covered is now more than four and one half millions. During all this time not a single fatal accident has

occurred, due to any mechanical failure, convincing evidence of their remarkably safe flying qualities.

Mr. Fokker believes that the greatest possibilities in the world for the commercial development of the airplane lie in America, and with a group of American business men, including Major Lorillard Spencer, Frank R. Ford and George R. Davis, he formed the Atlantic Aircraft Corporation, with a factory located at Hasbrouck Heights, New Jersey, on the edge of the Hackensack Meadows. The company engages in constructing airplane equipment for the United States Government and entered actively into the development and adaptation of Fokker commercial airplanes to American conditions, and their manufacture for the rapidly growing American market.

Mr. Fokker's own faith in the unlimited possibilities of commercial aviation in America is so strong that he has made the United States his home, and is developing his airplane business here as his principal activity.

He is a member of scientific societies in various countries and a contributor to scientific journals throughout the world on aeronautic subjects. His principal sources of recreation are yachting, automobiling and speed boats. The number of his inventions is very large and they are covered by some one hundred and sixty patents.



AERO DIGEST has a strong appeal for over 15,000 subscribers and newsstand purchasers every month. They form the largest group of readers of any American aeronautical publication.

AERO DIGEST goes to the most influential group of readers in the aircraft field. It is read by pilots, manufacturers, expert artisans, government officials and many others all vitally interested in aeronautics.

Here are extracts from a few of the letters received from our readers:

"I look forward to your magazine every month and read every word of it. I always enjoy the regular features by Cy Caldwell. Frank A. Tichenor and "Hell's Bells" O'Neil bu J. W. Bellah."

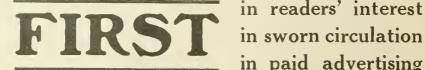
"Ever since I have been getting the magazine I can searcely wait for the next. It beats anuthing I ever saw".

"The news articles are very good and up to the minute and Cy Caldwell is the 'Jenny's Allerons'. Always read his line first, Another thing—a month is too long to wait for the next copy."

"The covers you have been using of late are certainly fine. It may interest you to know that your magazine was classed as one of the six best selling magazines in Okla, City about three weeks ago. I can surely say and with all confidence that the AERO DIGEST is the best on the market."

"I wish to state that I think it is the best publication of its kind I have ever read, on aeronautics-up to the minute with all angles of aviation taken under one cover,"

"Have found your magazine the best of many aerial magazines I have examined."



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220 West 42nd St.

New York, N. Y.

# A KNIGHT of the AIR

### Sir Alan J. Cobham Concludes his London— Australia—London Flight

S IR ALAN J. COBHAM, Great Britain's newest knight, received this honor upon the completion of his wonderful flight from London to Australia and back as recognition of the service to the Empire which this journey represented. Obviously the feat must

be a tremendous stimulant to the whole British impulse for the development of aviation. And to Australia its significance is recognized as definitely epochal.

This was Cobham's third long-distance air journey within two years. In 1924 he piloted Sir Sefton Brancker from London to Rangoon and back. In 1925-26 he flew the London to Capetown return trip.

For all three flights he has used the same D.H. 50J plane. On the Australian flight, it was equipped with an Armstrong-Siddeley "Jaguar" engine (14-cylinder, 385 h.p.) and all-metal floats.

Leaving London June 30th, Cobham took 37 days to fly the 11,380 miles to Port Darwin, Australia. His route carried him to Paris, Naples, Athens, Alexandretta, Bagdad, Basra, Bushire, Bandar Abbas, Delhi, Calcutta, Rangoon, Singapore and over the Dutch East Indies to Port Darwin.

While he was flying over the desert near Basra, his mechanic, Arthur Elliott who accompanied him on the Light to Capetown, was shot and killed by an Arab rifleman. Sergeant Ward, R.A.F., took his place. C. A. Capel, engineer, was the other member of the flying party.

At Port Darwin the floats were changed for wheels for the flight to Melbourne, through Camooweal, Charleville and Sydney, 2650 miles, the journey being made in 8 days.

On the homeward trip, Cobham was 5 days crossing Australia back to Port Darwin, 2230 miles, by the way of Adelaide, Oodnadatta, Alice Springs and Katherine. The return flight over the same route to London took 28 days.

In 78 days, the total of 28,000 miles were covered through heat and monsoon in a flying time of 320 hours.



@ Kaustone

Sir Alan Cobham, England's greatest commercial air route pioneer.

This is not the first flight to Australia, the Smith brothers, Sir Ross and Sir Keith, having flown over nearly the same route in 1919. Nor is it the fastest flight, as the Smiths made the trip in shorter time.

But the Cobham flight (or the Sir Charles Wakefield Flight, as it was officially called because of Sir Charles' generous financial backing) was not a stunt; it was a practical proposition.

The aviators were trying to survey the possibilities of air routes for seaplanes between England and Australia. They chose the worst time of the year for the venture which was made in the monsoon season. At a more favorable time of year the flight might have been more spectacular, but the technical results scarcely could have been so valuable. It can be called a triumph for British aircraft and material, as the same plane and engine were used from start to finish.

Sir Alan returned a firm believer in seaplanes for such air routes. As he says, ". . . it was only being able to alight at any moment on the various waterways we passed over that we were able to get through the many monsoon storms that we encountered."

The flyers were greeted with tremendous enthusiasm everywhere along the route. In Australia especially the people, impressed by this demonstration of the utility of flying which they now realize will wholly change their relationship to the balance of the world, accorded the expedition a magnificent reception. The British Empire's avowed intent is to achieve air supremacy as it in the past achieved sea supremacy. Sir Alan Cobham is the prophet of this determination.





Coming in over the Thames on his return to London.

Cheering throngs greet Cobham as he arrives in Melbourne.

# WITH the INDUSTRY

#### DETROIT NEWS

By Frank Bogart

ON the heels of the dedication of Buffalo's \$600,000 municipal airport, accompanied by the boast from industrial leaders of that city that they intend to run Detroit a close race for control of the manufacturing phase of the aviation industry, the group supporting commercial aviation's development here was startled to learn that it would be necessary to cancel the court proceedings for an airport and start afresh.

For six years the project had been agitated. Twice a start had been made in court. First a mistrial due to a juror's illness caused a halt. Now a curious mixture of complications as to legality, suitability and price of the site in question has thrown the entire project back for a new deal.

The City administration, headed by Mayor John W. Smith, than whom no municipal executive was ever a more thorough air enthusiast, and the City Council are determined to give the city the airport it needs to take its proper place in national aviation (being now the only large city without such a port).

But the aviation folks themselves discovered they were not a unit on the question. Some want a site comparable to the great airports of Buffalo and Cleveland, about which industrial development may center; others want a close-in terminal, with riverfront facilities.

There was only one such, but it was very small for its price of nearly \$3,000,000, and a suspicion of log-rolling connected with the price has made it appear that it will now not be the one to be selected.

The coming legislature, in January, will have to clarify several difficulties, but in the

meantime, starting with a public hearing on October 28, the councilmen and that section of the public interested will struggle with the selection of a site.

William S. Stout's declaration that New York and St. Paul can be linked by air, via Detroit, in 14 hours or less, found an echo in the appeal of New England and New York cities to Secretary Hoover and Postmaster General New that air mail connections between Boston and Detroit be established without further loss of time. The new Buffalo airport makes this possible, as mail and freight planes of the Ford Motor Company will shortly be operating to Buffalo, where they might connect with those of any other contractor who would operate between Buffalo and Albany, and thence to cither Boston or New York, or both.

Stout, with his own air service distinct from that of the Ford company, with which he still remains affiliated as general manager of the airplane division, has already projected extensions of his 142-mile line between here and Grand Rapids, westward over Lake Michigan to Milwaukee and eastward to Buffalo.

The Ford Motor Company has signified its readiness to bid on service between here and Buffalo.

The whole question of contract air mail routes, with the possible re-arrangement that will take place when the service passes to private operators, is of vital interest to Detroiters, who have more capital tied up in the operation of airlines than they have in the actual manufacture of planes at the present time.

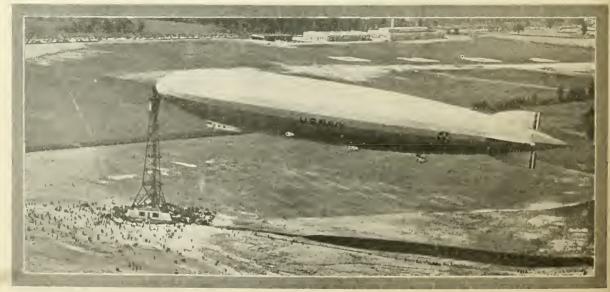
With the announcement by Postmaster General New that he may within 30 days ask for bids on the entire transcontinental ser-

vice, the probable course to be followed by National Air Transport becomes of the greatest interest. This concern, now in operation from Chicago to Dallas, was conceived in Detroit, and Howard E. Coffin is its president, while half a dozen others of the city's richest men are financially interested. The company's original aim was to operate between New York and Chicago. Its total capitalization of ten millions, although only part of this has been put into play thus far, alone marks it out as about the only operating company that would be interested in such a bid as New proposes.

In this connection, Detroit has an airport, (not Ford airport) under private control, with only one-third of its 600 acres as yet developed for flying, which may prove a factor in the development of new air routes. Grosse He, an island in the mouth of the Detroit river, with Lake Erie lapping its southern shore and an ideal seaplane harbor in connection, has been visioned by such world experts as have seen it, including Britain's director of civil aviation, General Sefton Brancker, as likely to become one of the world's finest airdromes, and a future junction point on international air lanes. It is under control of the Aircraft Development Corporation, which is now building here its first new-type metal-sheathed experimental 300-foot dirigible for the navy.

The month's outstanding events locally have not been numerous. Overshadowing all was the 12-hour visit on October 15 of the dirigible Los Angeles. Reaching here on the second anniversary of her arrival from Friedrichshafen, the airship was forced by storm warnings to cut short its proposed overnight stay.

(Continued on page 396)



Herbert Photos.

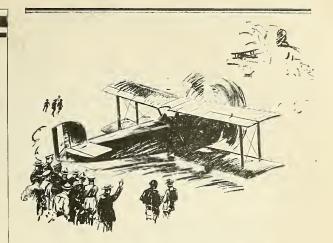
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It's the take-off that tests a good gasoline. Then, engine failure means disaster. No time to "pancake" into a friendly tree. No chance to glide.

That's why veteran pilots demand Socony. They know that the experience of over 52 years in refining Standard Oil Company of New York products produces a gasoline they can depend upon in the tight places.

Everywhere in Soconyland—in the air, on the sea or on the land, wherever dependability in gasoline is sought, there will you find Socony being used. Uniform in Quality—Best in Results.

# SOCONY

# Gasoline & Motor Oil

STANDARD OIL COMPANY OF NEW YORK
26 Broadway

Beating the storm back to Lakehurst she successfully completed her first long overland journey since coming into our posses sion. Her skipper, Lieutchant Commander Charles E. Rosendahl, and Admiral William A. Moffett, who came here en route to Youngstown, Ohio, aboard her, held several long conferences on the future of airships with Henry and Edsel Ford and William B. Mayo

The Fords' \$250,000 mooring tower has not yet been fully tried out, as the cone at the nose of the Los Angeles would not swing in an arc sufficient to permit a test of the special apparatus, devised by Herbert V. Thaden, to lower the airship to the ground without the aid of a ground crew.

The army dirigible RS-1 is due here shortly from Scott Field at Belleville, Ill., for the special purpose of testing this mechanism. Thaden is with the Aircraft Development Corporation, which is building a tower at Scott Field similar to the one it erected for Ford.

The city council has appropriated \$20,000 to be divided between the National Guard and Naval Reserve air units for erection of hangars. Both outfits will receive their planes before December 1.

"Eddie" Rickenbacker is devoting all his time to pushing production of his new 60horse air-cooled radial motor, having resigned from the automobile company of his name. The engine is in use in the Driggs "air coupé." Fokker has been out to have a peek at it.

Major Thomas G. Lauphier and his pilots of the First Pursuit Group have been absent much of late from their home station, Selfridge Field, engaged in gunnery practice at their northern Michigan camp. When the detail of 10 pilots ordered from Selfridge to Texas to take part in the motion picture "Wings" returns, Major Lanphier will map out his winter course of action, which may include a most interesting cross-country training flight. The Selfridge pilots are also looking forward to the starting of their new permanent quarters, replacing the war time shacks in which they have frozen for eight winters



International Newsreel.
Commander Byrd, Harry F. Guggenheim and Air Secretary of Commerce MacCracken.

#### BYRD POLAR PLANE TO MAKE 7,000-MILE TOUR

THROUGH the courtesy of Commander Richard E. Byrd, and in coöperation with the Department of Commerce, the Daniel Guggenheim Fund for the Promotion of Aeronautics is sending Byrd's North Pole plane, the Josephine Ford, on a 7,000mile tour of the United States.

Floyd Bennett will pilot the plane on the tour which will cover the important air routes between the east and west coasts, visiting about forty cities.

The trip is to be made primarily as a demonstration of the reliability and safety of commercial flying. Commander Byrd has loaned the plane as his contribution toward advancing the cause of aeronautics and to furthering nation-wide interest in air travel and in the use of air mail. It is hoped that as a result of the trip, towns and municipalities along the existing air routes will be encouraged to establish air ports.

Assistant Secretary William P. Mac-Cracken, Jr., of the Department of Commerce, has given every possible aid to the officers of the Guggenheim Fund in arranging the trip. Full cooperation is also being received from the Army and Post Office air services. Through the latter a local pilot thoroughly familiar with local conditions will aid Floyd Bennett in piloting the

plane between many of the landings.

The Fokker monoplane started from Washington on October 7th, and made its first stop at New York and its second at Albany. In addition to the crew, Assistant Secretaries MacCracken, Davison and Warner, of the Department of Commerce and of the Army and Navy, Commander Byrd and Mr. Harry Guggenheim accompanied the plane on the trip from Washington to New York.

#### BIDS ASKED SOON FOR GOVERNMENT AIR MAIL

DEFINITE steps toward relinquishment of the transcontinental and the overnight New York-Chicago air mail services are being taken by the Post Office Department and during November advertisements will be issued inviting bids from contractors to take over the service. The bids will be made returnable 60 days from the date of advertisement. This period of time is deemed necessary to allow potential bidders time in which to arrange for financing the enterprise.

The Post Office Department has on hand something like 85 airplanes, 15 hangars located at flying fields all of the way across the country, and considerable shop equipment worth several million dollars, necessary for the maintenance of the air mail service, which probably will be disposed of.

Postmaster General New reiterated his oft repeated statement that no company can successfully operate a commercial air service on a mail contract alone but must also be prepared to transport passengers and express.

Postmaster General New and W. Irving Glover, Second Assistant Postmaster General charged with the operation of air mail, are laying plans for changes in air mail postage rates that will render them uniform, and provide a flat rate applicable throughout the country for all air mail transportation regardless of distance or other factors.

Present rates, complicated by the zone system and by a different basis provided by legislation for contract routes, are extremely conflicting. They are not only incomprehensible to mail patrons but are not entirely understood by postal clerks. The transfer of the transcontinental service to private contractor would render them even more confusing.



International Newsreel-

Casey Jones piloting Gene Tunney, world's heavyweight champion, to the fight.

\$800



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# NEW STANDARD J1 AIRPLANES

SET UP, TEST FLOWN, READY TO FLY AWAY—COME AND TAKE YOUR PICK

with used OX5 motors installed.....

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#### CORAL GABLES AIR RACE AND EXHIBIT

A N airplane exhibit will be held in conjunction with the Progress Week Cclcbration, November 22-27, at Coral Gables, Florida under the auspices of the Coral Gables Chamber of Commerce and Miami Chamber of Commerce. This will be the first real display of aircraft in Southern Florida and all manufacturers are urged to exhibit their latest models.

An "On-to-Coral Gables" race is planned with a substantial prize for the winner. Anyone desiring to enter this race and exhibit should communicate with Gilbert H. Chaplin, General Chairman, Progress Week Celebration, 2314 Ponce de Leon Blvd., Coral Gables, Florida.

The planes are scheduled to arrive on Tuesday, November 23rd, Greater Miami Day, on which date a half holiday will be declared to view the arriving planes, and the parade and pageant to be held.

Space allotment, publicity and advertising for this exhibit will be free to the manufacturers entering their planes. The exhibit will be handled by Captain J. B. French, local manager for the Florida Airways Corporation, who are now running planes from Miami to Tampa and Jacksonville, and who are going to inaugurate the Miami-Havana run December 1st.

Havana will be largely represented by an exhibit during this week sending over a cruiser with notables and dignitaries totogether with the Havana Military Band.

An automobile show is another feature of Progress Week. As everything will be free to the public an unusually large attendance is expected.

#### DAVENPORT, IOWA, TO HAVE A FLYING CLUB

By RALPH W. CRAM

THE organization of a Flying Club by young business men of Davenport will soon give this city a new sport and social organization organized along the same lines as its golf and outing clubs. It will have a limited number of members, its own private flying field, and will develop flying as one of the sports of the vicinity.

The club has taken over the lease of Wallace Field, the fine 100-acre field formerly operated here by Frank Wallace. It has incorporated with Frederic E. Zeuch as president, Tom J. Korn, vice-president, Robert L. Block, attorney and secretary, and R. A. Moritz as treasurer. Other members of the board of directors are Ferdinand C. Korn, Donald A. Luscombe, Warren T Zeuch, Burton E. Forrester, Frank C. Wallace and Robert Luscombe. All are prominent in the business and social life of the

Wallace Field will be promptly put into first class condition, and will ask for a place again on the United States air maps. Visitors to the field will be welcomed and furnished emergency service, but the club will do no commercial flying. Its articles of incorporation recite that it is organized purely "to promote the sport and science of aviation.'

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#### CURTISS FLYING SERV. SEPTEMBER ACTIVITIES

THE recent Florida hurricane gave the newspapers and newsreels a cause to call on the Curtiss Flying Service once more for fast service.

Sunday, September 19th, a call came about 2 p. m., for a fast ship to take two men, a news writer and movie man, to Miami, Fla. Pilot A. L. Caperton was ready when his passengers arrived, at three-thirty. They hopped off immediately, refueling at Washington and landing at Fayetteville, N. C., at dusk. Leaving Favetteville the next morning at dawn, refueling at Savannah, Ga., and Daytona Beach, Fla., Caperton made Melbourne, Fla., by three-thirty, from where his passengers proceeded by train as the flying field at Miami was flooded. By airplane travel the passengers saved some fifteen hours in time over that of the train.

Two hours after Caperton hopped from Curtiss Field, Pilot W. H. McMullen took off in a Curtiss Lark, headed for Fayetteville, N. C. He made Logan Field, Baltimore, Md., about half an hour after dark. Leaving Baltimore at daybreak, Monday, he made Favetteville about 11 a. m., received orders there to proceed to Columbia, S. C., and directions for getting a package of photo plates off the train, which was due in Columbia at five-fifty p. m., Daylight Saving Time. The few hours waiting for the train were spent in checking over the motor and preparing for a night hop home. The train arrived on time, McMullen hopped off an hour



George Wies, Travel Air representative, and the editor of Aero Digest.

after dark. The boys at Pope Field were most generous in their work refueling, changing oil, etc., while McMullen called New York, for weather reports. McMullen left Pope Field at 9:30 p. m. and set a compass course for Petersburg, Va., but a very heavy west wind came up soon after leaving Fayetteville and the first point he could check on was Norfolk and Newport News, Va. Not sure of service at Langley Field, Va., especially at such an early hour in the morning, McMullen set a course for Washington, D. C., which he reached at

3:00 a.m. The boys at the Naval Air Station were soon busy refueling and rechecking the motor, for the final leg of the journey to New York. McMullen left Bolling Field, Anacostia, D. C., at 4:00 a. m., bucking a head wind and light rain.

It certainly was some head wind for it was three hours and thirty minutes before he reached New York-about an hour after daybreak. McMullen had been in the air eighteen hours, between 6:00 a. m. Monday and 7:00 a. m. Tuesday.

Monday morning, September 20th, found Pilot J. P. Andrews and a photographer in the third ship to leave Curtiss Field, N. Y., bound for Atlanta, Ga. They refueled at Washington, D. C., and had a very adventurous experience when landing at Winston-Salem, N. C. Andrews had to wait over Tuesday and Wednesday at Atlanta for late films of the Florida disaster.

#### MAJOR YOUNG CHIEF OF AIR REGULATIONS

 $m M^{AJOR}$  CLARENCE M. YOUNG of Des Moines, Iowa, veteran of the World War, has been appointed Chief of Air Regulations and Inspection of the Department of Commerce.

Major Young is a graduate of Yale University and is well versed in matters pertaining to aeronautics. He is a reserve officer of the Army Air Corps and has been assigned by the War Department as Commanding Officer of the 313th Observation Squadron, 88th Division, 7th Corps Area.

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Special Frices until Avovember 15th: 2½" scalloped tape, per yard, 4c. Grade A cotton, 35" wide, per yard, 35c.; 35", per yard, 40c.; 72", per yard, 60c. French brown sbeck absorber cord, ½", per foot, 8c. New war-production DH cases, \$12. New preduction tires and tubes. fresh stock guaranteed, 26 x 4 cases, \$11; 26 x 4 inner tubes, \$2.50; 750 x 125 cases, \$17; 50 x 125 inner tube, \$3.50. New Fahrenheit gauges with tubes, \$6.50. New oil gauges, 50-lb., \$1.75; 60-lb., \$1.50; 120 lb., \$2. New I to 2 Johns-Manville tachometer adapters, \$6. New production type A Johns-Manville tackometer heads, \$12.

NEW OX5 and OXX6 Parts:

Propeller hub puller assemblies, \$1.50. Socket wrench crank-shaft nut, 30c.; socket wrench propeller hub-nut, 30c.; water pump pack nut wrench, 30c.; trust-bearing lock-nut wrench, 30c.; crank-shafts, \$7.50. Cylinder flange gaskets, 5c. Complete set (80) OXX6 or OX5 gaskets, \$3. Complete set (20) hose, \$1.25. Brand new OXX6 cylinders, \$15. Complete set used valve actions, overhauled and rebushed, with new hose, (good as new) for complete motor, \$45.

Extra Specials:

Flying suits, brand new, heavy waterproof outside, jiffy fasteners, big handy pockets, equipped with electric heating units, just the thing for winter flying, fur-lined, \$75. sheep-lined, \$60. Every make of goggles ranging in prices from \$2.50 for genuine non-shatterable to \$7.50 for the best goggles made. Sheep-lined flying moccasins, per price \$7.50 for the best goggles made.

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#### NEW ENGLAND NEWS

By DANIEL ROCHFORD

THE Massachusetts American Legion has undertaken to cooperate with the committee appointed by the Philadelphia American Legion Convention, October 14th, in studying the advisability of this country's adopting the Mitchell plan for a threepart national defense organization, as well as to develop airports and advance air interests in the Bay State. A state aviation committee was appointed by State Commander William McGinnis with Lieutenant Daniel Rochford of Boston, secretary.

The first annual aerial review of all Boston flyers is to be held Wednesday, October 27th, in tribute to "Navy Day." The event is sponsored by the New England Reserve Air Service Officers Association. A new hangar, 80 by 60 feet, for the Boston Airport Corporation was built by the William E. Arthur Company of New York. It is a duplicate of the Hoover Field, Washington, hangar of the P. R. T. Air Service.

Gus Graf who has been doing stunt flying from Bethany, Conn., this summer and who made parachute drops at the Plymouth and Danbury fairs and at the New Haven seaplane convention, has gone to Cuba. Sebastian L. Pond of Yale, flying a pleasure plane, a Tommy Morse, landed turtle back fashion at Meriden early this month but suffered no serious damage

Ben Kelscy flies the Jenny belonging to the Waterbury Light Plane Club from Bethany.

Because of early darkness the schedule for the Colonial Air Transport, Inc., was moved ahead, the south bound air mail plane leaving Boston at 2.45 p. m. and arriving at New York at 6.00 p. m. Northbound, the plane leaves New York at 5.00 a. m. and arrives in Boston at 7.50 a. m.

Service aircraft averaged 70 hours weekly from Boston all month.

Captain Lyle C. White, for three years flight surgeon at the Boston Airport, is to be given a farewell party in the near future He leaves for the Philippines from New York December 22nd.

The Municipal Air Board of Boston is to attempt a legislative reorganization of the present Boston Airport control to give the city commercial rights and duties there. Major Charles H. Wooley, C. O. of the Mass. National Guard flyers, heads a committee of three planning the legislative work

Buffalo and Boston were linked by an air visit of Buffalonians early in the month. Mayor Nichols of Boston said he is to fly to Buffalo to repay the visit next summer.

#### FLORIDA AIR NEWS

M ACON, GEORGIA, was inaugurated on September 27, as an air mail stop on the Florida Airways route from Jackmille to Atlanta. This city of 70,000 population turned out and with the assistance of the army flyers from Maxwell Field and the commercial planes from Atlanta, a roaring opening was staged. The municipal field,

recently completed was named "Miller Field" in honor of Mayor Wallace Miller. The plane, the second Stinson-Detroiter to be placed in service on the line, was christened "Miss Macon."

The first Stinson-Detroiter powered with Wright Whirlwind engme was the first vehicle to enter Miami from the outside world after the recent disaster. Immediately after the hurricane the Stinson-Detroiter left Atlanta with a shipment of two million dollars in currency and flew that day to Miami, Two Federal men were placed on board the plane to guard the money; and Potter, the chief pilot of the Florida Airways who flew the machine, was sworn in as a special deputy. Two newspaper men also made the flight. After delivering its cargo the plane left Miami the same day and returned to Tampa so that in that one day it actually flew 1.180 miles, and in addition carried on board the largest shipment of cash ever carried by an airplane.

The Florida Airways Corp. were fortunate because only one ship was lost in the recent disaster.

September was the largest month for the Florida Airways Corporation since inauguration on April 1st, their planes carrying an average of 107 pounds of mail matter during this 30-day period. The Florida public is rapidly coming to the front in its support of air services and within the next 30days will have an additional airport comprising a combined airplane and seaplane base. This port at St. Petersburg will be circular with 4.000-foot runways.



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#### SPERRY AWARDED FRITZ GOLD MEDAL

ELMER A. SPERRY, vice-chairman of the Engineering Foundation, has been awarded the John Fritz Gold Medal for 1926 in recognition of his "development of the gyro-compass and the application of the gyroscope."

The formal presentation of the award will be made on the evening of December 7, at the Engineering Auditorium New York, N. Y. It will be in connection with the annual meeting of the American Society of Mechanical Engineers, during which Charles M. Schwab will be inaugurated as president.

#### AIR MAIL COLLECTIONS AT STAMP EXHIBITION

WENTY-five large air mail and balloon letter collections on display attracted considerable attention at the International Stamp Exhibition held at Grand Central Palace, New York, N. Y., October 16th to 23rd. Huge crowds attended the exhibit throughout the week.

Among the outstanding exhibits were several valuable collections, which were awarded the following medals, according to classifi-

General Collection Air Mails of the World. 1st prize, silver gold medal—Harry A. Truby, New Kensington, Pa.

2nd prize, silver gold medal-T. A. Chaplin, London, England.

3rd prize, silver medal-Rev. T. R. Kim-

ball, Hyde Park, Mass.

4th prize, bronze medal-Major Joseph A. Steinmetz, Philadelphia, Pa.

Balloon and Pigeon Posts of the Siege of Paris.

1st prize, gold medal-George W. Angers, Springfield, Mass.

2nd prize, gold medal-John W. Prevost, Springfield, Mass.

#### HASKELITE AT THE NATIONAL AIR RACES

T the National Air Races in Philadel-A I the National An All Haskelite plyphia, September 4 to 11, Haskelite plyphia, excellent wood equipped planes made an excellent record.

Thirteen races were run, 141 planes being entered; of these, 117 were Haskeliteequipped—or 83 per cent.

Of the 39 planes which placed first, second, or third in the 13 races. Haskelite planes won 10 first, 11 second and 10 third places, a total of 80 per cent.

These figures are based only on sales direct from the plant to aircraft companies whose planes were entered although it is the belief that many other planes entered were equipped with Haskelite, procured from Haskelite dealers.

#### NAVY AIR SERVICE ORDERS

(Concluded from page 376)

Richardson, Lt. Lawrence B., (C.C.), detached Inspector of Naval Aircraft, Cleveland, Ohio, to Naval Air Station, San Diego, Calif. (Sept. 29) Rodd, Lt. Herbert C., detached Bureau of Engineering, to duty with Scouting Squadron 2 (VS-2), Aircraft Squadrons, (Oct. 14)

Schildauer, Lt. Clarence H., detached Naval Aircraft Factory, Navy Yard, Philadelphia, Pa., to duty with Scouting Squadron 2 (VS-2), Aircraft Squadrons, Battle Fleet. (Oct. 14) Schumacher, Ch. Bosn. Bernhard; detached Navy Yard, New York, to c.f.o. U.S.S. Saratoga. (Sept. 27) Shoemaker, Lt. Comdr. James M., detached VI Squadron I. Aircraft Squadrons, Battle Fleet to

Sept. 27)
Shoemaker, Lt. Comdr. James M., detached VJ
Squadron 1, Aircraft Squadrons, Battle Fleet, to
Aircraft Squadrons, Battle Fleet, (Sept. 28)
Smith, Lt. Comdr. Alma C. (M.C.), detached
U.S.S. Langley, to Naval Hospital, Boston, Mass,
(Oct. 14)
Sogorka, Mach. John, to duty c.f.o. U.S.S. Sara-

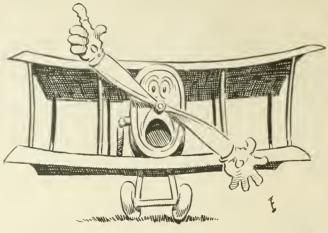
Sogorka, Mach. John, to duty c.f.o. U.S.S. Saratoga.

Southword, Ensign Harrison B., detached Naval
Air Station, Pensacola, Fla., to U.S.S. Nokomis.
(Sept. 27)
Sweeney, Mach. James A., detached U.S.S. Camden, to c.f.o. U.S.S. Lexington.
(Oct. 16)
Swithenbank, Lt. Charles E. (S.C.), detached
Naval Air Station, Pensacola, Fla.
(Oct. 15)
Szehner, Ch. El. Frank C., orders Sept. 30, 1926,
modified; to c.f.o. U.S.S. Lexington.
(Oct. 18)
Taylor, Lt. (j.g.) Rhea S., to duty with Aviation
Detachment of VO Squadron 4, Aircraft Squadrons, Bartle Fleet.
Alford, Lt. Comdr. Thalbert N., detached command
U.S.S. Kennedy, to temporary duty Naval Air
Station, Pensacola, Fla.
(Oct. 12)
Turner, Comdr. Richmond K., detached Bureau of
Ordinance, to temporary duty Naval Air Station,
Pensacola, Fla.
(Oct. 14)
Whitemore, Lt. Frank R., detached VJ Squadron
1, Aircraft Squadrons, Battle Fleet, to VJ Squadron
2, Aircraft Squadrons, Battle Fleet,
Young, Lt. Clifton A. (j.g.) detached Naval Hospital, Boston, Mass., to Aircraft
Squadrons,
Scouting Fleet.

#### MARINE CORPS AIR ORDERS

THE following Marine Corps orders have been issued as of the dates indicated in brackets: Appleby, Capt. S. H., M.C.R., assigned to active duty for training at Naval Air Station, Lakehurst, N. J. (Oct. 4). Relieved from active duty. Gerard, 2d Lt. A. V., directed by the Comdt., detached Marine Barracks, Naval Air Station, Pensacola, Fla., to M.C.B., N.O.B., San Diego, Calif. Cushman, 1st Lt. T. J., detached Naval Air Station, Pensacola, Fla., to Naval Air Station, N.O.B., San Diego, Calif. (Oct. 7). Reidy, Pay Clerk J. J., detached Marine Barracks, Naval Air Station, Lakehurst, N. J. to Chicago, Ill., for duty as deputy of the A.P.M., Philadelphia, Pa.





The

AIR

AERO DIGEST will award a prize of \$5 each month for the best joke published. Only jokes pertaining to the aircraft field will be considered. Address the "Picked From The Air" Department, Aero Digest, 220 West 42nd Street, New York, N. Y.

Kenneth D. Stern, St. Louis, Missouri, won the prize for November with the following:

It is Christmas eve. The house is silent as a tomb. Embers glow dully in the hearthplace, throwing flickering shadows on the face of little Willie, skeptically awaiting the arrival of St. Nicholas, concerning the existence of whose personage certain harsh companions of the tender age of eight have declared to be "the bunk."

Midnight. A rumble in the heavenly distance. Willie glances expectantly to the mantelpiece.

A size 5½ beige silk stocking, unrolled from the knee up, dangles there. Sic transit Gloria's mundi.

The rumble increased to a roar. Suddenly, a mighty crash. The house quivers and trembles. A barrage of bricks and soot falls into the fireplace.

Struts, radiators, gimmicks, gaskets and sundry other accessories of a DH rain from the heavens, including a begoggled and parachuted pilot.

The night air mail had landed.

"Oh, Ma!" wildly calls the unbeliever, "Who says there ain't no Santy Claus?"

He: "Johnny pushed Jack out of his "Jenny" when they were 5,000 feet up."

She: "What happened?"
He: "He made Jack soar!"

-Richard Grocott,

Two countrymen were standing amazed at a roaring airplane which was flying over the city advertising candy. The candy bars were supported by miniature parachutes, when one of the men exclaimed, "Jim! Look, ain't them the smallest umbrellas you ever seen?"

-Louise Willis.

"Is Kirker thrifty?"

"He thinks he is. He has just paid twenty thousand dollars for a dirigible so he can see all the ball games free."

-American Legion Weekly.

Sign seen on fuselage of one of "cradles of Liberties" attached to Captain Jigg's Squadron, Langley Field:—"Gentlemen Prefer Bombs."

-Kenneth D. Stern.

Chlora: "Maizie jumped out of Freddie's airplane yesteray."

Dhora: "Good to the last drop, wasn't she?"

-Colgate Banter.

First Aviator: "Go on home; you're drunk."

Second Aviator (wobbling wildly): "Drunk nothin'; somethin's wrong with m' ailerons."

Robinson: "I heard Simpson say his limit was the sky; what is he, a gambler or an aviator?"

Thompson: "Both; he flies a Jenny."

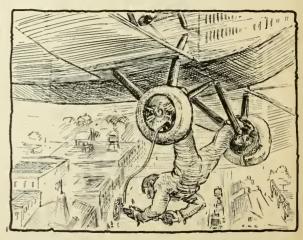
First Aviator: "They tell me Johnnie's interested in raising fruit."

Second Aviator: "Yes, he's always taking up a peach in that old crate of his."

-Marie Snow.

Muggins: "Has anyone ever attempted to explain to you the principles of aircraft?"

Buggins: "Yes, but it goes right over my head."



Ambitious, but eccentric, mechanic: "How's this for low visibility?"

# Home Study in

A BABY CREEPS. BEFORE IT WALKS, and before a person attempts to fly, he or she should have a thorough knowledge of the fundamentals of aviation.

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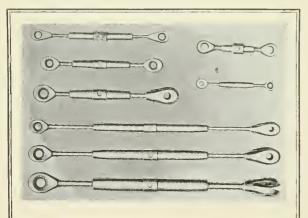
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#### AIR - HOT AND OTHERWISE

(Continued from page 359)

in this national mind beyond the mental grasp of fat-headed politicians, in or out of office, of selfish businessmen of the dub, of the dumb Doras and the do-funnies who fail to realize that this is a new age, with new facilities, new aspirations and greater, more idealistic ambitions than any nation of the past has known.

Mitchell laid down the principles on which the resolution presented by the Committee on Aeronautics was based. That a single Government Department of Defense, headed by secretaries equal in authority, one for Army, one for Navy, and ONE FOR AIR forthwith shall be created, is now the avowed and splendid demand of the American Legion and all the politicians know it. Maybe the Departments also may have heard of it, maybe not; that doesn't matter; the politicians know the Legion is a wonderful cross-section of the whole national population and the whole national population is the voting body in our sort of a Republic.

"Adoption of the report," said the Philadelphia Public Ledger, a solemn, old line sort of newspaper, accustomed to applauding all the things that are, "came as a sharp surprise to the officers of the Army." The propagandists of the Infantry, the Cavalry, the Artillery and probably the Quartermasters Corps had been collecting funds and spending them with confidence upon their propaganda for the maintenance of America's Air Force as a split, subordinate nonentity. They thought they had the nation, even that they had the veterans, completely buffaloed. Their intrepid faces paled and were convulsed by agony as they woke up. It is the sad fate of the fighting man to suffer pain!

The Committee of the American Legion that reported favorably on Colonel Mitchell's plan for a single department of national defense represents nearly 700,000 vital, energetic, principally young and active men who were "over there"—what the papers, to the veterans natural disgust, invariably call "our heroes," and what the politicians and the bureaucrats had best begin to think about quite seriously as "our voters."

These men have experienced the horrors of war; they know that the United States lies fat and rich and fit to kill if it would stand for it, and will lie virtually helpless against terrible invasion from the east or from the west, from the north or from the south if it doesn't forthwith fit itself with aerial defense superior to that aerial attack which, elsewhere in the world, is being busily prepared. Most of these veterans are, in peace-time, strivers in the business field, and they know that if they are to be worth while competitors of foreign businessmen they must have as an adjunct of this nation's business worthy commercial aviation.

If their unanimous report in favor of a single department of national defense, with a separate secretary for aviation, does not convince the Congressmen and Senators, the President and his Cabinet members, the nation as a whole undoubtedly will supply further instruction in the well known manner which it practices at intervals with the assistance of the ballot box.

If the Seventieth Congress is gifted by the gods with common sense, it will base its various procedures with regard to aviation on the informed opinion of men easily to be found in this army of real experts. It is incredible that the American Government again shall try, as it tried in the Mitchell court-martial, to hush the voices of the men

who know. The opinions, the convictions, the determination of 700,000 surely will have influence.

American history holds no parallel of the amazing greeting given to this man Mitchell there in Philadelphia. Conviction by a court-martial carries with it contumely and disgrace only when the people pass on it as just, but the reverse when they regard it as improper, and this greeting made the latter obvious. We are not celebrated for subservient submission to authority; we are always among those present when words, bricks, and if necessary more effective missiles fly in a demand for justice and fair treatment. The fact that, a year before, this man had been judged blamable by a body of individuals inferior to him in knowledge and in patriotism, was a feather in his cap, not a stain upon his head. The same sort of reception which was given to him in Philadelphia would be given to him in every city, town and hamlet in the country.

#### A NOD AND A WINK

(Continued from page 361)

spend a little effort to mark their fields and towns so he may know where he is, and either fly on or land, and perchance, buy himself a little gas; or even, if in North Carolina, a pint of good corn whisky, than which there is nothing than whicher.

As a pleasant contrast to these not so charming people I would mention and warmly commend the operators of the field at Clarion, Pa. I have never landed at their field and do not know them, but for the past three years I have thought of them kindly and appreciatively whenever I flew over their field, which lies on the air mail route between New York and Cleveland. On their hangar roof floats a large clean wind-cone, clearly visible from 1500 feet; and in the center of the field, in large white letters, probably crushed stone or slag, appears the word CLARION. I don't know them, I say. But if they ever come to New York will they honor me with their company for dinner and schnapps at the Quiet Birdman's Club? For they must be good fellows, taking pride in their field, and also being good-hearted enough to spend some labor and money to guide the other fellow in case he gets lost in some of that peculiar Pennsylvania weather, which at times resembles pea-soup. Twice I was very nearly baffled in that State, and only won through by rubbing a rabbit's foot on my left-ear, if I remember correctly-at the same time repeating the magic words, "Wogga! Wogga!" Which, being translated into the vernacular, means, "Holy mackeral! Where in hell am I?"

While I'm tossing bricks and bouquets around, I might as well chuck one at the Air Mail. But they're all such good fellows and have treated me so well any time I landed on their fields that I'll wrap the brick in flannel-which, by the way, would be a good material from which to make naval officers' uniforms. Mr. Filbert, you might have that idea tried on your sewing-machines.

But this insulated brick is intended merely as a suggestion to the big lads down in Washington. They have a fine line of emergency fields between New York and San Francisco, with which their own pilots are thoroughly familiar, but which are not marked in any way to indicate to strange pilots that these are landing fields. True, there are the beacon light towers, but they are not readily distinguishable from the air. It would be a simple and com-(Continued on page 406)

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(Continued from page 405)

paratively inexpensive matter to put a circle or square or triangle of white crushed stone or white slag in the centers of these fields, thus marking every field from coast to coast. On some flights between New York and Cleveland and Chicago I tried to pick out the fields, and, although I had them marked accurately on my map, there were several that I couldn't find, and others about which I was doubtful. (And Jack Whitbeck needn't write and tell me I'm dumb, either.)

Of course, markings would be invisible part of the winter, due to snow, but they would be a great help to flyers during the rest of the year. It may be argued that marking is a useless expense, as the mail pilots know where the fields are, and there's no reason why the Air Mail should aid the air traveler. True enough. But it would be a mighty nice, kind thing to do; and it wouldn't cost so very much. If it saved even one citizen from landing in a bad field and perhaps breaking his neck, it would be worth all it cost. There are more people flying every month, people who haven't had so much experience. They at least would appreciate marked airways, and I believe that even the veterans who can set a plane down on a dime would like to see the fields marked. It's much more comforting to glide into what you know is a flying field than it is to glide into a field on which nothing but a grasshopper has ever landed before. Perhaps the thought comes to you as you notice too late the little ditch in the center that the grasshopper probably leaped over it with more joy and abandon than you will experience when you roll into it.

Incidentally, I have an uncle who could supply the crushed rock for these markings. He's been in about three years on account of a misunderstanding regarding some oil stocks; and I should say he must have broken enough stone by now to mark all the fields.

There's another thing about flying fields that deserves some thought freed of sentimentality. And that is the illadvised practice of naming commercial fields after dead pilots. It is a very slight honor to the dead, and sometimes leads to bad feeling among the living. For instance, a certain deceased pilot's name was suggested for a large municipal airport. There was not a doubt that he was worthy of the honor, if honor it was; but the city was large, and several pilots from that city had died in the war or in flying accidents. The friends and relatives of those deceased pilots not unnaturally came forward with the suggestion that those boys' claim to such an honor also should be considered, which was no more than just. Fortunately, and very wisely, the danger of hard feeling on several sides was averted by naming the airport with the name of the city, which is what should have been done in the first place. If naming fields after the dead is an honor, it is an essentially unfair honor, for there are not enough fields to name one after every pilot who has died in war or in the furtherance of aviation; and thus seeming to draw distinctions between those who have flown to the Fairer Fields is something in which they themselves probably would not concur.

There has been altogether too much of that done already. If Razor Back Ridge, Arkansas, for instance, has a municipal field, they should name it Razor Back Ridge Airport, not Ramsbottom Field, after some pilot of that name who crashed taking off. It makes commercial passengers too thoughtful. You tell a prospective passenger, "You will leave from McCluskey Field, named after a pilot who spun in; and you will land at McWhiskey Field, named after a gent who tried to roll too close to the ground." It's all

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wrong-you lose the passenger.

The railroads don't do that sort of thing. You don't see them naming their stations after some engineer who went by the signals and bumped his head on the rear Pullman of the stalled train ahead. The railroads know that some fatalities occur in the business of transporting people at speed, but they do not feel that it is good policy to name stations after the victims. Never yet have I seen any station called "John Smith, Wife, and Three Small Children Junction," and yet I know that Smith families have been wiped out time and again in railroad accidents, for every train has at least eight Smiths aboard.

Besides, think of the effect on the man the field is named after. Just suppose that Tony Yackey and I have two fields named after us, and that we die and go to Heaventhis is all supposition, of course. Well, there are Tony and me up there, looking down. We've laid our harps aside for the moment, we'll say, and are resting, like a couple of naval deck officers. Some of the other boys have grown fed up with music too, have leaned their harps against a tree, flapped their wings a couple of times to get the kinks out of them, and have come over beside us.

Now, suppose Tony and I are looking down at Yackey Field, Chicago—you couldn't even suppose Tony having a field any place else; it's easier to suppose him in Heaven. At that moment some pilot makes a bad landing and bounces all over Yackey Field. Right away I remark, "By G-" (I forget, I'm supposed to be in Heaven.) "Behold, Tony," I say in Hebrew, which I understand is the chosen language, "behold, the young man maketh a bum landing on thy field. Yea, verily."

Well, Tony is naturally fond of his field, takes a pride in it, you might say, and is in the habit of keeping his eye on it when he isn't harping. He gets a bit peeved that I should notice the bad landing on his pet field, and retorts, "Aw! For the love of G—" (I keep forgetting we're in Heaven). "Verily, Cy, I say unto you, I have seen even

worse on thy field, thou horse-faced son of a-

Naturally, I'm proud of the field that has been named after me, and I take umbrage at that remark. I have a pint flask of umbrage in the hip pocket of my robes; and I take a pull at it whenever I'm peeved or tired of harping, which grows very monotonous after a time.

"I'll bet thou hast not seen one as bad on my field, oh, Tony Angelico," I retort angrily, ruffling my wing feathers, and kicking a few pearls and rubies into the golden

gutter.

"I'll bet thee a sheckel," says Tony, feeling for his pants pocket, and forgetting that he isn't wearing pants up there, for he hasn't been in Heaven long enough yet to remember that all he has on is a long nightgown, in which he looks very fetching. "I'll bet thee a sheckel that the next bird landing on thy confounded field is worse than the baboon-visaged son of a-pardon me, Gabriel-than the one who landed on my field."

Naturally, I take him on; and one of the other loafers holds the stakes while we all sit there watching for the next landing. Of course, nobody does any harping, and before the bet is decided we all are about six tunes behind on the day's work.

Besides that, just think of the moral aspect of two angels in good standing in Heaven, sitting there betting!

And if that isn't enough, just imagine the vitriolic language of the angelic Tony when the next pilot arriving at his field is Casey Jones, who lands neatly on top of one of Tony's motorcycles!



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#### "AH, THERE, BILL-HOWDY!"

(Concluded from page 351)

the great open spaces around St. Louis, Parker D. Cramer and M. C. Loutt of Clarion, Pa., two good scouts, and also—hang onto your seats, folks—Major Bill Tipton of Baltimo', Maryland, and the Pennsylvania Hotel lobby after 3 a. m. Bill is a live-wire credit to a drab town made famous by H. L. "Hatrack" Mencken of the Watch and Ward Society. (Stick with me, reader. Your name may be here. Pretty nearly every name in the States is—and some from New Jersey).

Life beyond the grave was represented by several insurance gentlemen: J. G. Baukat of the Travelers', H. Barber of Independent Indemnity, M. J. Cusick of the Travelers' and J. Brooklev Parker. Then there was C. A. McAllister of American Bureau of Shipping, A. J. Smith, A. Stanley Driscoll, G. Grant Mason, Jr., Arthur H. M. von Thaden, A. T. Stewart, and Walter Link of American Airship Ass'n out in Ajo, Arizona, by Gosh! (Bet you never heard of that one before). The Curtiss Company's expense account was hit wallops by Frank Russell, Temple Joycehe sure can handle a plane, that Joyce, about as well as Peggy Toyce can handle a divorce court lawyer—M. M. Merrill, and Casey (himself) Jones. Also we had A. J. Elias of Buffalo and Lessiter C. Milburn, one of the cleverest aeronautical engineers in the country, and one with whom it is a pleasure for a test pilot to work. For two and a half jolly years I tested planes designed by Milburn and in all that time there wasn't a harsh word between us, which is a record for that work, I believe, for it sure does try the temper at times.

Other contributors of ideas when the collection plate was passed were F. P. Sheehan of Kentucky Airplane, Bob Hewitt of the New Jersey Wilds, C. G. Peterson of Wright's, Paul E. Garber of Smithsonian Institute, Athel Denham of Automotive Industries, and G. S. Ireland, the Oriole breeder who has successfully Burbanked an orange-colored Oriole into a green Ireland Comet. If your name hasn't appeared in this list, write your Congressman and

complain about it.

Now, these are merely some of the army that descended upon Bill MacCracken and his able assistants. Ira Grimshaw, C. M. Young, R. S. Moore, P. J. Croghan, and S. F. Tillman of the Department of Commerce, Air Branch. All came armed with suggestions. And every night the janitor walked out with full waste-baskets. I had three good suggestions myself, and had read as far as the second one when Bill said, "Just a minute, Cy," and rang for the janitor.

In addition to valuable advice from those who called personally, Bill had the advantage of several hundred letters and telegrams, which added considerably to the janitor's labors. But out of the mass of good, bad, and indifferent advice so generously donated—for men who wouldn't give a penny to a blind orphan will give away advice any time —MacCracken and his associates have sorted out what they consider to be the best, and are drafting the air regulations, which I shall not comment on now; for when they finally are drafted we'll print a copy, and you can read them all through if you're a big strong man.

But I will say that from what I have seen, the regulations are about as reasonable and fair as they can be. Any sort of regulation is an annoyance to the person regulated, but it is a necessary annoyance. The finest point about them is that the Secretary will have power to change or rescind any rule that fails to work out well, or that is rendered burdensome or obsolete by changing conditions. And my impression of Bill MacCracken is that he is a capable and clear-thinking man, open to conviction on any point founded upon reason and common sense.

Let us remember that nobody in the world can draft rules to please everybody—and if they were pleased now they'd be displeased to-morrow with something that delighted them to-day. I feel now that I approve of nearly everything Bill is doing, though this 1926 schedule is subject to change without notice. For I reserve the right to turn around and bite him any time I want to, thus upholding the glorious traditions of the Press. But at this stage of the game, when it's a case of cut and try, with plenty of opportunity for errors—human nature being what it is—I think a fair attitude for all of us to take is one of friendly welcome to a man who has tackled a very difficult job—such an attitude of friendliness as I have suggested by the heading of this report, "Ah, there, Bill!—Howdy!"

#### ALASKAN FLYING

(Concluded from page 355)

was reported to be very near death. He was in a little cabin twenty miles farther in with no way to get him out to the hospital at Fairbanks. We were asked to try and find a landing place somewhere on top of one of the mountains. Well, I flew in (on route marked "2") and found the cabin among 2500-foot hills, made a landing on a dome as near to the cabin as possible, about one mile distant, doing no damage except breaking about four inches on the tip of the Hamilton propeller which I replaced with an extra. As the fellow was a little better I was able to get him up to the plane. Then we made a breath-taking take-off down the other side at a steep angle, hit a little shelf and shot into the air over the tall spruce timber. The fellow was out of Fairbanks hospital in two weeks.

During the summer months we flew mostly by night it was daylight all night, and was usually calm and damp making the motors run better. One day a message came from the gold camp of McGrath and Takonta, a distance of 300 miles southwest, to come and get a mine foreman who had fallen dead while at work. The only means of travel there in summer was by boat, taking about three weeks; it took three to four hours by plane (see "7" on map). So the undertaker at Fairbanks and I took the six-place Fokker and arrived there about four hours later. At two in the morning, after a little rest, we made ready to take off. The sand bar at McGrath was so soft that the men at the camp had to push on the wheels to get us started. After running 1600 feet we got off drawing a spray of water from the river as we left the bar-rather too close to suit me. I made 5 round trips between Fairbanks and Takonta.

There are very few people in Alaska who will not fly. We carried many women and children, as there seems to be more danger going by the long tiresome ground routes than by air. In ten months of flying, covering 20,350 miles and 351 hours in the air, I broke two propellers. However, as we expected breaking them we carried an extra whenever possible. The last flights were made using skis in weather from 10 deg. to 40 deg. below zero encountering very stiff winds in mountains which forced the plane down 1000 feet at a time. Some other trips I made by air from Fairbanks were as follows: to Eagle (see "A" on map); 2 trips to Crooked Creek (B); 3 trips to Ft. Yukon (C); 3 trips to Beaver (D); to Rampart (E); to Glacier (F); and to Roosevelt (G).

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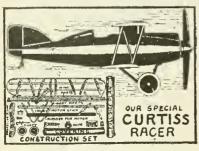
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State of New York, Sec.

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Before me, a Notary Public in and for the State and county aforesaid, personally appeared Frank A. Tichenor, who, having been duly sworn according to law, deposes and says that he is the Business Manager of the Aero Digest, and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management, etc., of the aforesaid publication for the date shown in the above caption, required by the Act of Congress of August 24, 1912, embodied in section 411, Postal Laws and Regulations, to wit:

1. That the names and addresses of the publisher, editor, managing editor, and business managers are: Publisher, Aeronautical Digest Publishing Corp., 220 West 42nd St., New York, N. Y.; Editor, J. E. Horsfall, 220 West 42nd St., New York, N. Y., 22.

That the owners are: The Aeronautical Digest Publishing Corp., 220 West 42nd St., New York, N. Y., Abram Horsfall, Martinsburg, West Virginia; J. E. Horsfall, 220 West 42nd St., New York, N. Y., 3.

That the known bondholders, mortgagess, and other security holders over other securities are: None.

4. That the two paragraphs next above, giving the names of the owners, stockholders, and security holders as they appear upon the books of the company but also, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and condition under which stockholders and security holders who do not appear upon the books of the company as trustees, hold estock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to

#### JAPAN'S CIVIL AVIATION

(Concluded from page 353)

in the twenty-five century history of the country was held at the Yovogi Field, Tokyo, in March. It called forth the star pilots of both the Army and the Navy. And with them were six civilian operators in civilian machines, who were the equal of the Army and Navy men and planes in every sense.

Also last year the Imperial Aviation Association, the largest and the oldest organization of the type in Japan. started its half-a-million ven (\$249,000) building in Shiba District of Tokyo-the first real home for Nippon's air activities.

Then, in that eventful year, came the crowning achievement, so far, of civilian aviation in Japan-the Tokyo to London and Rome flight. To be sure it was not entirely a civilian affair, for one of the two pilots who brought the flight to successful conclusion, Lieutenant Abe, was an Army flyer connected with the Aviation Bureau of the Department of Communications. The mechanics who accompanied the two planes, Mr. Shinohara and Mr. Katagiri were both army engineers. But the other pilot, he who guided the Kochikaze, was the first class civilian operator, Mr. Kawachi. However, the flight was a civilian It was financed entirely by two widely read enterprise. newspapers, the Osaka and the Tokyo Asahi, which are both under one ownership. Moreover, the two planes which made the trip, the Hatsukaze and the Kochikaze were the private property of the newspapers and were both made in Japan, although they were engined with 400 horse power Lorraine Dietrich motors.

There are 14 aviation schools and training stations for civilian flyers. Three of them are in or near Tokyo and the others are scattered over the Empire at large cities like Osaka, Kvoto and Sendai. Every year the Aviation Bureau of the Department of Communications selects 15 young men out of about 140 applicants and trains them at the public expense. The selection is made through mental and physical examinations. The qualifications call for boys of not younger than 17 or older than 20 years of age, and they must pass about the same sort of academic examination as that of the third year class of the Middle School. The Communications Department turns these applicants over to the Army and Navy training stations to ground them in the needed essentials as air pilots. From this source alone about a dozen new civilian flyers come

to full feather every year.

Much less picturesque, doubtless, than the home-coming of the air-conquerors of the Siberian route, but quite as important, was what the 50th Session of the Imperial Diet did early in 1925. It passed the long pending and much discussed scheme for establishing two air routes involving the estimated expenditure of 21,000,000 yen (\$1,045,800). One is between Takorozawa airport and the city of Mukden, the capital of Manchuria, via Hakone, Osaka, and Heijo (Korea). And the other is between Etorop in the northernmost string of islands under the sun-flag called the Kuriles and the airport at Kogoshima at the southern end of Kyushu. This line is to pass through Kasumigaura and Kushimoto, traversing the whole Nippon proper from the northern to the extreme southern tip. This great scheme is being carried out as a five-year program starting with the financial year, 1925.

At the present time the Japanese Ministry of Communications are requesting 11,200,000 ven (\$5,577.600) for the development of new air routes and the subsidizing of air

transportation companies. The proposed new air lines are from Tokyo to Dairen: from Osaka to Shanghai, and from Tokyo to Saporo. The first two routes are to be established by April, 1932, and of the appropriation for this year, it is estimated that 7,000,000 yen (\$3,486,000) will be expended for physical sites; 2,000,000 (\$996,000) for hangars; 1,500,000 yen (\$747,000) for the establishment of wireless and telegraphic stations. Flying equipment on the first two routes is estimated at an additional 8,000,000 yen (\$3,984,000).

#### "HELL'S BELLS" O'NEIL

(Continued from page 366)

spend this war in jail. I'm an American by birth and a Canadian by mistake. I'm willing to fly and not willing to go to jail for flying. You may not be aware of the fact but I can fly. Gentlemen, I hold the long-distance flying record for the R.F.C. Canada!'

"So, of course, they sent him to jail. But-

"In that army, the law works both ways and there are many slips 'twixt the vodka and the lip. For instance if the papers of the court-martial are not complete when ready for filing and the missing ones are not to be found, then there is no trial, no retrial and consequently no crime. One paper was missing in Dizzy's case. Where it was, no one knew. Dizzy was released. But that isn't all. Another law says that a man must have one day's leave and one day's pay for every day of illegal Clink. Dizzy got six weeks pay and six weeks leave.

"He spent a week in Detroit, came back, graduated and went overseas.

"The last I saw of him he was at the Royal Pig's Knuckle Inn near Richmond with a hole in his face, a D.F.C. and a theory that we had all better desert and join the German Air Service. It wouldn't be any worse than the ones we knew and it was probably a damn sight better than the local ones. Anyway it was sure to be an even break and in Germany the Generals were too proud to pay any attention to mere lieutenants and captains. Or as the saying goes 'A bird in the hand is worth two on Shaftesbury Avenue.'

"Which reminds me," said "Hell's Bells," "of Cadet

Smith V.C." (In December.)

#### BRITISH LIGHT PLANE MEET

(Concluded from page 364)
The Avro "Avian," with Armstrong Siddeley 5-cylinder "Genet" engine, piloted by Mr. Bert Hinkler, was an easy winner with an average speed of 90 m.p.h. The "Avian" is a remarkable machine in that the weight empty is only 695 lbs., yet it carries 827 lbs. of useful load. The Bristol "Brownie" came in second with an average speed of 71.5 m.p.h. The DeHavilland "Moth," with "Genet" engine, came in third; average speed, 94.75 m.p.h., which was excellent speed with full load.

The Grosvenor Cup Race, having 21 competitors, was the best race of the meet. The Blackburn "Bluebird" easily won with a speed of 84.95 m.p.h. The Parnall "Pixie" won second with a speed of 75.18 m.p.h. Third, the R. A. E. "Hurricane"; average speed, 84.79 m.p.h.

The Lympne Open Handicap for the Royal Aero Club prize ended the meet. The R. A. F. of Farnborough "Cygnet" won the event; second, Parnall "Pixie;" third, Bristol "Brownie."

Altogether it was an excellent meet and similar events in America for light planes should prove of value in the development both of light planes and light power plants.

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DECEMBER, 1926

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The First Flight — December 17, 1903.

The history-making event at Kitty Hawk, N. C., photographed as the plane had risen a few feet off the ground. Orville Wright piloted while Wilbur ran alongside and balanced the machine during the take-off.

# STORY OF THE FIRST FLIGHT

THE flights of their glider in 1902 convinced Wilbur and Orville Wright of the efficiency of their system of maintaining equilibrium and the accuracy of the laboratory work upon which the design of their glider was based. They then felt they were prepared to calculate in advance the performance of machines with a degree of accuracy that had never been possible with the data and tables used by their predecessors. Before leaving their camp at Kitty Hawk, North Carolina, in 1902 they were at work on the general design of a new machine which they proposed to operate with engine-driven propellers.

Upon their return to Dayton they wrote to a number of automobile and engine builders stating the purpose for which they desired an engine, and asking whether one could be furnished that would develop eight brake horse-power, with a weight complete not exceeding 200 pounds. Most of the companies answered that they were too busy with their regular business to undertake the building of such an engine, but one company replied that they had engines which weighed only 135 pounds and rated at 8 h.p., according to the French system of ratings. It had but a single cylinder of 4 inch bore and 5 inch stroke and its power probably was much overrated. Unless it would develop a full 8 brake horsepower it would not serve its purpose.

Finally the Wright brothers decided to build an engine themselves. They designed an engine of four cylinders with 4 inch bore and stroke, weighing not over 200 pounds including all accessories. Up to that time their only experience in the building of gasoline engines had been in the construction of an air-cooled engine, 5 inch bore and 7 inch stroke, used to run the machinery of their small workshop. To be certain that four cylinders of the size they had decided upon would develop the necessary 8 h.p. they first fitted them into a temporary frame of simple and cheap construction. Six weeks from the time the design was started they had the engine on the block testing its power. There was no provision for lubricating either cylinders or bearings while this engine was running and for that reason it was not possible to run it more

than a minute or two at a time. In these short tests the engine developed about 9 h.p. They were then satisfied that with proper lubrication and better adjustments a little more power could be expected. The completion of the engine was therefore proceeded with at once.

While their assistant, Mr. C. E. Taylor, was engaged with this work, Wilbur and Orville were completing the design of the machine itself. The preliminary tests of the engine having indicated that more than 8 h.p. would be secured, they felt free to add enough weight to build a more substantial machine than originally contemplated.

Their tables of air pressures and experience in flying with the 1902 glider enabled them to calculate the thrust necessary to sustain the machine in flight. But to design a propeller that would give this thrust with the power

at their command was a matter not as yet seriously considered. Data on air propellers was not available but they understood that an efficiency of 50 per cent with marine propellers was not unusual and that it would be necessary only to learn the theory of the operation of marine propellers from books on marine engineering, substituting air pressures for water pressures. Several such books were secured from the Dayton Public Library. All the formulae on propellers contained in these books were of an empirical nature and there was no way of adapting them to calculations of aerial propellers. As they could neither afford the time nor expense of a long series of experiments to find by trial a propeller suitable for their machine, they decided to rely more on theory than was the practice of marine engineers.

They agreed that a propeller was simply an aeroplane traveling in a spiral course. As they could calculate the effect of an aeroplane traveling in a straight course, they felt that to calculate the effect of one traveling in a spiral course would not be difficult. On further consideration they found it hard to find even a point from which to make a start, for nothing about a propeller, or the medium in which it acts, stands still for a moment. The thrust depends upon the speed and the angle at which the blade strikes the air; the angle at which the blade strikes the air depends upon the speed at which the propeller is turning, the speed the machine is traveling forward, and the speed at which the air is slipping backward; the slip of the air backward depends upon the thrust exerted by the propeller and the amount of air acted upon. When any one of these changes it alters all the rest, as they are all interdependent. But these are only a few of the many factors that must be considered and determined in calculating and designing propellers. Their minds became so obsessed with it that they could do little other work. They engaged in innumerable discussions and often after an hour or so of heated argument would discover that they were as far from agreement as when they started, but that both had changed to the other's original position in the discussion. After several months of this study and dis-

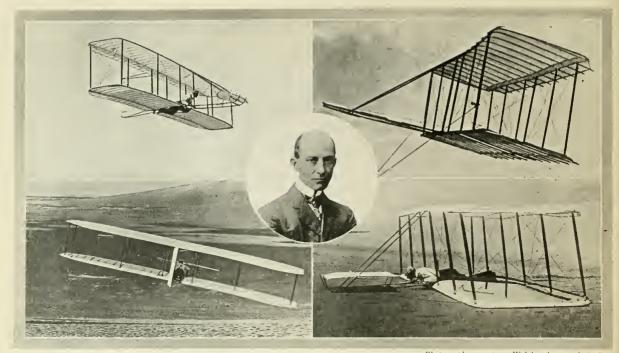
cussion they were able to follow the various reactions in their intricate relations long enough to begin to understand them. They realized that the thrust generated by a propeller when not moving through the air was no indication of the thrust when moving forward. Their only recourse to really test the efficiency of propellers were him.

on the machine.

For two reasons they decided to use two propellers. In the first place by the use of two propellers they could secure a reaction against a greater quantity of air and at the same time use a larger pitch angle than was possible with one propeller; and in the second place by having the propellers turn in opposite directions the gyroscopic action and torque of one would neutralize that of the other. The method adopted of driving the propellers in opposite directions by means



The Fathers of Flight-Orville and Wilbur Wright.



Photographs courtesy Wright Aeronautical Corp

Wilbur Wright and the gliders flown by the Wright brothers in 1901 and 1902-forerunners of the power-driven machine.

of chains is now too well-known to need description here. They placed the engine to one side of the pilot so in case of a plunge headfirst, the engine could not fall upon him. In their gliding experiments they had had a number of experiences in which they had landed upon one wing, but the crushing of the wing had absorbed the shock, so that they were not uneasy about the motor in case of a landing of that kind. To provide against the machine rolling over forward in landing they designed skids like sled runners extending out in front of the main surfaces. Otherwise the general construction and operation of the machine was to be similar to that of the 1902 glider.

When the engine was completed and tested, they found that it would develop 16 h.p. for a few seconds, but that the power rapidly dropped till, at the end of a minute, it was only 12 h.p. Ignorant of what a motor of this size ought to develop they were greatly pleased with its performance. With 12 h.p. at their command, they considered that they could permit the weight of the machine with operator to rise 750 to 800 pounds and still have as much surplus power as they had originally allowed for in the first estimate of 550 pounds.

Before leaving for their camp at Kitty Hawk they tested the chain drive for the propellers in their shop at Dayton and found it satisfactory. They found, however, that their first propeller shafts, which were constructed of heavy gauge steel tubing, were not strong enough to stand the shocks received from a gasoline engine with a light fly wheel although they would have been able to transmit three or four times the power uniformly applied. They therefore built a new set of shafts of heavier tubing, which were tested and thought to be strong enough.

They left Dayton, September 23, arriving at the camp at Kill Devil Hill on Friday, the 25th. Provisions and tools had been shipped by freight several weeks in advance. The building, erected in 1901 and enlarged in 1902, was found to have been blown by a storm from its foundation posts a few months previously. While they were awaiting the arrival of the shipment of machinery and parts from Dayton, they put the old building in repair

and erected a new building to serve as a workshop for assembling and housing a new machine.

Just as the building was being completed, the parts and material for the machine arrived. The next three weeks were spent in setting the motor machine together. On days with more favorable winds they gained additional experience in handling a flyer by gliding with the 1902 machine.

While Mr. Chanute was with them a great deal of time was spent in discussion of the mathematical calculations upon which the Wrights had based their machine. Mr. Chanute informed them that, in designing machinery, 20 per cent was usually allowed for the loss in the transmission of power. As they had allowed only 5 per cent, a figure arrived at by some crude measurements of the friction of one of the chains when carrying only a very light load, they were much alarmed. More than the whole surplus in power allowed in their calculations would, according to Mr. Chanute's estimate, be consumed in friction in the driving chains. After Mr. Chanute's departure, they suspended one of the drive chains over a sprocket and on it fixed a weight approximately equal to the pull that would be exerted on the chains when driving the propellers. By measuring the extra amount of weight needed on one side to lift the weight on the other they calculated the loss in transmission. This indicated that the loss of power from this source would be only 5 per cent, as originally estimated. But while they could see no serious error in this method of determining the loss, they were uneasy until they had a chance to run the propellers with the engine to see whether they could get the estimated number of turns.

The first run of the motor on the machine developed a flaw in one of the propeller shafts. The shafts were sent at once to Dayton for repair, and were not received again until November 20. They put them in the machine and made another test. A new trouble developed. The sprockets, which were screwed on the shafts and locked with nuts of opposite thread, persisted in coming loose. They heated the shafts and sprockets, melted hard tire cement into the

threads and screwed them together again. This trouble was over. The sprockets stayed fast.

Just as the machine was ready for test, bad weather set in. It had been disagreeably cold for several weeks, so cold that some days they could scarcely work on the machine. But it now began to rain and snow, and from the north a wind of 25 to 30 miles blew for several days. While they were being delayed by the weather they arranged a mechanism to measure the duration of flight from the time the machine started to move forward to the time it stopped, the distance traveled through the air in that time, and the number of revolutions made by the propellers. The watch, anemometer and revolution counter were all automatically started and stopped simultaneously. From data thus obtained they expected to prove or disprove the accuracy of their propeller calcula-

On November 28, while giving the motor a run indoors, one of the tubular

shafts cracked! Solid tool-steel shafts of smaller diameter than the tubes previously used were decided upon. They would allow a certain amount of spring. The tubular shafts were many times stronger than would have been necessary to transmit the power of the motor if the strains upon them had been uniform. But the large hollow shafts had no spring in them to absorb the unequal strains.

Wilbur remained in camp while Orville went to get the new shafts. Orville did not get back to camp again till Friday, the 11th of December. Saturday afternoon the machine was again ready for trial, but the wind was so light a start could not have been made from level ground with the run of only 60 feet permitted by their monorail track; nor was there enough time before dark to take the machine to one of the hills, where, by placing the track on a steep incline, sufficient speed could be secured for starting in calm air.

Monday, December 14, was a beautiful day but there was not enough wind to enable a start to be made from

the level ground about camp. They therefore decided to attempt a flight from the side of the Kill Devil Hill. Having arranged with the members of the Kill Devil Life Saving Station. located a little over a mile from camp, to inform them when the first trial of the machine was ready to be made, they were soon joined by J. T. Daniels, Robert West-

| CE                       | AIRSHIP AFTER BUYER.                                                                                                                                                                                                                                                          | Si                   |
|--------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|
| ate                      | Inventers of North Carolina Box Kite<br>Machine Want Government to<br>Purchase It.                                                                                                                                                                                            |                      |
| ауэ                      | Special to The New York Times. WASHINGTON, Dec. 25.—The inventors of the airship which is said to have made several successful flights in North Carolina, near Kitty Hawk, are anxious to sell                                                                                | Ti                   |
| tion                     | tha use of their device to the Government. They claim that they have solved the problem of acrial navigation, and have never mada a failura of any attempt to fly.  Thair machina is an adaptation of the box kite idea, with a propeller working on a                        | A                    |
| era<br>red<br>vic-<br>at | perpendicular shaft to raise or lower the<br>craft, and another working on a horizontal<br>shaft to send it forward. The machine, it<br>is said, can be raised or lowered with per-<br>fect control, and can carry a strong gaso-<br>line engine capable of making a speed of | vi<br>no<br>F.       |
| tha td .r. a n-n         | ten miles an hour.  The test made in North Carolina will be fully reported to the Ordnance Board of the War Department, and if the machine commends itself sufficiently, further tests will be made in the vicinity of Washington, and                                        | he<br>pr<br>Tl<br>nh |
| d<br>of<br>n.<br>is      | an effort made to arrange a sale of the de-<br>vice to the Government. The use to which<br>the Government would put it would be in<br>scouting and signal work, and possibly in                                                                                               | ter<br>or<br>w       |

The first mention of the Wright brothers' first flight in the New York Times, December 26, 1903—nine days after the flight. The inventors' names were not considered important enough to report.

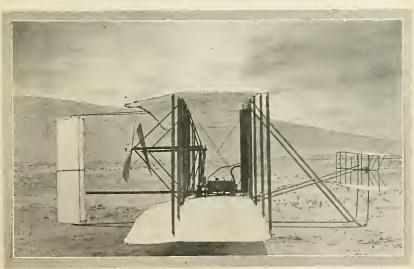
cott, Thomas Beachem, W. S. Dough, and Uncle Benny O'Neal, of the station, who helped get the machine to the hill, a quarter-mile away. A track was laid 150 feet up the side of the hill on a 9 degree slope. With the slope of the track, the thrust of the propellers and the machine starting directly into the wind, they did not anticipate any trouble in getting up flying speed on the 60-foot monorail track. But they did not feel certain the operator could keep the machine balanced on the track.

When the machine had been fastened with a wire to the track so that it could not start until released by the operator, and the engine had been run to make sure it was in condition, the brothers tossed up a coin to see who should make the first trial. Wilbur won. Orville took a position at one of the wings intending to help balance the machine as it ran down the track. When the restraining wire was slipped the machine started off so quickly he could stay with it only a few

feet. After a 35 to 40-foot run, it lifted from the rail. But it was allowed to turn up too much. It climbed a few feet, stalled, and then settled to the ground near the foot of the hill, 105 feet below. The stop watch showed that it had been in the air just 3½ seconds. In landing the left wing touched first. The machine swung around, dug the skids into the sand and broke one of them. Several other parts were also broken but the damage to the machine was not serious. The test had shown nothing as to whether the power of the motor was sufficient to keep the machine up, since the landing was made many feet below the starting point, but the experiment showed that the method adopted for launching the machine was a practical one. On the whole they were much pleased.

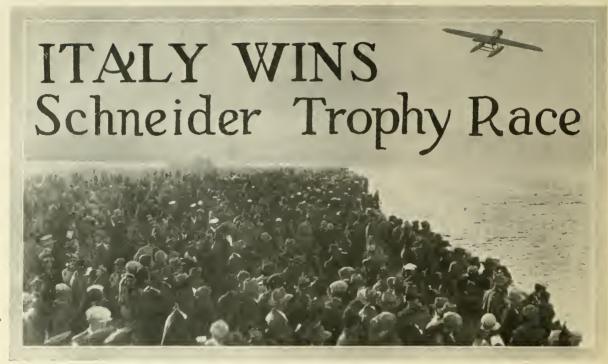
Two days were consumed in making repairs and the machine was not ready again till late in the afternoon of the 16th. During the night a strong cold wind blew from the north. When they arose on the morning of the 17th the puddles of water, which had been standing about camp

since the recent rains, were covered with ice. The wind had a velocity of 22 to 27 miles an hour. They thought it would die down before long and so remained indoors the early part of the morning. But when 10 o'clock arrived and the wind was as brisk as ever they decided they had better get the machine out and attempt a flight. (Cont'd on p. 476)



Photographs courtesy Wright Aeronautical Corp.

Side view showing power installation in first successful man-carrying plane.



P. & A. Photo.

T is all over now but the shouting. Every bit of this is being done in Italian so America's non-linguistic aviators have an admirable opportunity to sit down and figure out what happened

to them in this year's Schneider Trophy Race. No expert is needed to tell that they took a terrible trimming from the aerial envoys of Signor Mussolini. Nor is it much less obvious why.

In the parlance of the street, Italy "had the stuff" and picked pilots for her racing team who weren't afraid to strut it all over the sky. Uncle Sam's flyers were just as willing but their vintage-of-1925 machines were outclassed.

Major Mario de Bernardi, captain of the Italian team, saved the day for Italy and made the last great international air trophy safe for at least another year's competition. But for him the Schneider Cup—which isn't a cup at all unless the bronze Zephyr it portrays is taking a

drink from the sea instead of kissing the waves as she appears to be would have been won by the Navy and remained in America for all time. This by virtue of condithe contest which provide that the trophy is to become the permanent property of the nation winning it three times in

The Flying Fascisti
Finish First
By C. B. Allen

five years. The trophy came to this country for the first time in 1923 when Lieut, David Rittenhouse, U.S.N., won the race at Cowes, England, and was kept here last year by Lieut, James H. Doolit-

to them in this year's Schneider Trophy Race. No expert the second to tell that they took a terrible trimming from both the English and Italians.

Major de Bernardi's average speed for seven laps of the difficult 50-kilometre triangular course at Norfolk, where the seaplane speed classic was held November 13 of this year, was 246.496 miles an hour. His nearest rival, Lieut. C. Frank Schilt, U.S.M.C., fell fifteen miles below this mark with an average speed of 231.363 miles an hour in the self-same black racer with which "Jimmy" Doolittle in 1925 at Baltimore ran off with the race by the then phenomenal average of 232.573. Only two other planes of the six entries finished the race; Lieut. Adriano Bacula, flying a foxy, throttled race to be sure that Italy would

have at least one machine complete the course, and Lieut. William G. Tomlinson, U.S.N., in a Curtiss Hawk standard pursuit plane whose only chance of winning was the failure of everything else. Bacula's average speed for the race was 218.-006 miles an hour and Tomlinson's 136.953. Lieut. George



P. & A. Photo.

Major de Bernardi carried on the shoulders of a cheering crowd after winning the race.

T. Cuddihy, of the Navy, piloting the rebuilt and remotored Curtiss racer on which the Americans pinned their chief hope of victory, was forced out of the race on his last lap of the course by the failure of a hand pump to raise gasoline from tanks in the plane's pontoons to feed the roaring engine. Capt. Arturo Ferrarin, pilot of the third Italian demon-red Macchi monoplane, dropped out

and landed after the third lap because of motor trouble. Cuddihy's average speed at the end of the sixth lap was 239.191 miles an hour, while Ferrarin's average when he quit was 238.358. The following table shows the average speed of all autrents at the end of the various laps:

1 137.312 232.427 224.172 2 139.340 236.180 228.046 3 139.598 237.762 229.642 4 138.878 237.965 230.512 5 138.612 238.791 230.853 6 137.570 239.191 231.173 7 136.953 ...... 231.363 The Italians functioned as a team and

flew a well-planned race. Their strategy was for de Bernardi and Ferrarin to get every drop of speed they could from the 800 horse power Fiat motors

speed they could from the 800 horse power Fiat motors which drove the trio of racing monoplanes and for Bacula to hang back, nursing his engine for a sure finish in the

event that both the other two power plants failed to stand up under the terrific strain. It was tough on Bacula but good team-work and better technique. After the second lap it was evident that Major de Bernardi would win the race unless something happened to slow him up.

A merica's team, on the other hand was more or less demoralized when it entered the race. Originally the Navy had planned to fly the three Curtiss racers built in 1925 for the Pulitzer Trophy Race at Mitchel Field and subse-

quently entered in the Schneider Trophy Race at Baltimore. One of them—Jimmy Doolittle's winner—was fitted with a new and presumably "faster" set of pontoons for the race and put in condition for the big event but otherwise left in its original form. It had been acquired, of course, from the Army as this year's Schneider was to be an all-Navy affair.

The Curtiss people took one of the others and installed in it a new 1550 motor of their development which was rated at 700 horse power or 100 more than that of the original engine. Packard and the Philadelphia Navy Yard combined forces to equip the other with a 700 horse power Packard engine, geared down so that the propeller would turn at a slower and more efficient speed.

The jinx that has dogged Navy aviation so persistently now applied its sinister touch. Lieut. Conant, flying from Washington to Norfolk to superintend unpacking his racer and begin practicing for the race, was killed when his plane crashed in the Potomac. Lieut. Carleton C. Champion was designated by Rear Admiral William A. Moffett, Chief of the Bureau of Aeronautics, as the alternate who would take Conant's place.

Champion took up Conant's plane for a practice flight at the Norfolk air base. and last venture aloft in the racer; a with the motor and Champion landed,

It was his first and last venture aloft in the racer; a "tough session" with the motor and Champion landed, badly shaken by his experience, the power plant of his machine all but ruined. Following repairs, Lieut, Cuddihy

took up the plane that supposedly was Champion's. Evebrows lifted. It was reported he got more than 256 miles an hour out of the all-Curtiss plane whereas his own Packard- Curtiss plane was not performing as well as it had in previous tests at Philadelphia and Anacostia. Rumors began to float that Cuddihy was to be shifted to Champion's machine.

C u d d i h y looked as if the cares of the universe had been dumped on his shoulders. Lieut. Commander Homer C. Wick, in charge of the Navy racing (Cont'd on p. 481)



Major Mario de Bernardi.



Photos by Wide World and Underwood & Underwood.

The fastest seaplane in the world, the Macchi. After the Schneider race it was flown at 258.873 m. p. h. breaking the world's straightaway speed record.

# AIR-HOT AND OTHERWISE

HIS year's chance is dead because no worth while effort was put forth to save

We mourn its loss less because of our defeat than because we know that doctors were at hand

with the ability and waiting for the call to save the patient. These men were fully alive to the crisis in the sick room where America's hope lay gasping, but their messengers for medicine were stopped before they started for the corner drug store by watchers just outside the sickroom door, upon the theory that the purchase of the medicine would cost too much.

But, though we all have real cause for weeping, we find some comfort in the fact that as fellow mourners we have Admiral Moffett and the Bureau of Aeronautics.

They know that in America we have both designers and builders who could have fashioned a plane to win the third leg of the Schneider race, thus keeping the trophy permapently here

If Admiral Moffett had had reasonable funds on which to draw for the preservation of the prestige of this mighty nation in the air, we never would have lost the trophy.

We weren't merely beaten in the Schneider Trophy Race—we were very soundly walloped.

We all knew it had to come.

"Well, what's going to happen?" a man asked an honest-to-God flyer the morning of the race.

"We're gonna lose our pants," said the honest-to-God flyer, knowing well what was impending.

We give all honor to new Italy and the Italians while we cry shame on those who rightly may be held responsible.

At the very moment when Uncle Sam was held to be too poor to build planes for the great contest and therefore let the skillful, brave Italian and his great chief, Mussolini, whom none can say is not a patriot, wrest from him the high speed record and the coveted trophy that goes with it, the genial old chap down in Washington nevertheless had a vast surplus in his pocketbook and was busily engaged in the reduction of taxation.

The procedure of the men responsible was not only bad sportsmanship and bad patriotism but bad business, for in consequence of this defeat, we shall have to go to Italy to win that leg back into our possession and the cost of that flight in a foreign land will be a shock to the cheesparers. In the meanwhile the enemies of our aviation may find a public reaction to the situation which apparently they do not at all expect. Americans do not like the flavor of defeat.

At the same time, John Bull, with a deficit instead of a surplus, and wondering (as he fingers the hole in his pocket) just how he can increase taxation of his groaning citizens, proceeds to build by far the world's greatest dirigible, to carry 100 passengers and much freight from London to Bombay.

As for transatlantic work, which, of course, will be the next great step in aviation, Uncle Sam is planning none, while little Spain, who has been a pauper nation ever since we licked her in 1898 with one hand tied behind us, is establishing the Christopher Columbus Company to operate an airship service to and fro across the watery miles between Seville and the Argentine.

The arguments of the destroyers of our air ideals are humorous. We have heard, for instance, from almost

Lost—To the United States
The Schneider Trophy

#### Frank A. Tichenor

every government authority who knows nothing in the world about it, that in spite of what has happened to aviation in America it shows a development not exceeded elsewhere in the world. (The entomologists of the Agricultural

Department are about the only ones who have not qualified as experts in aeronautical matters.) To which, of course, the only answer is "so does your old man." This is just as intelligent as some of the evidence submitted before the various investigations that have taken place during the past two years.

It might be wise for President Coolidge to call the members of his Aircraft Board together again, and ask some of the authorities who testified to explain why we, the leaders of aeronautics in the world, are licked in the first contest held after the adjournment of his much-advertised and less-famed board. Their answer might be enlightening and would possibly reveal "how old is Ann."

Fortunately the loss of the Schneider Trophy and other things that have happened in our Air Services can be repaired. In fact they are mere episodes although annoying now. The unkillable cannot be killed.

All that the bunglers have done is to produce a few black eyes and damaged noses on the faces of right honest men, delay the revelation of the truth, and lay up for themselves a wrath to come which certainly will fall upon their necks out of the skies and sink them as an aerial bomb would blow up and sink a battleship. Let us hope our uniformed cutups will be sunk before our Navy is. Useless as our battleships may be they have cost a lot of money and are right nice to look at.

Having poured this additional handful of hot ashes on its head in shame over the sad facts it must record of the Washington procedure in connection with American aviation, Aero Digest (an incurable optimist as Heaven knows it needs to be) wishes to remark that that which has occurred may be a blessing in disguise, meantime taking off its hat to Mussolini and making a low bow to the progressive, enterprising Englishmen. The Italian duce did well. Whatever politics he plays, devious as his tactics may seem to an outsider, they are at least designed to stimulate what he thinks is the glory of his Italy. He may slap France and England in the face—but he does not slap Italy; he may sneer at other flags but he salutes his own; he has visions of new grandeurs for his native land which do him credit. He differs in these matters from some notable Americans.

Indeed his victory in connection with the Schneider Trophy will be to us a blessing, even if well disguised, if it performs the inconceivable—actually waking Congress up to the true air situation. It may even remove the camouflage from congressional eyes placed there by the experienced lobbyists of the Army and Navy, and make that body legislate to free the American Eagle from the shackles which now bind it to a stump. We have a perfectly good eagle. Why keep it in chains?

Of course we shall get the trophy back. It is inconceivable that America should let it permanently stay out of the country. But private individuals may have to do the trick—to the everlasting shame of the United States Government, but quite in line with past performances.

Excepting the good work of the Air Mail Department, and that accomplished by (Continued on page 483)

# SOME PIONEERS OF THE AIR

HE names of many spectacular pilots of the pioneer days of commercial flying in

#### By Mont Hurst

Chas. C. Witmer, Harold Kantner and Earle Ovington. Then Miss

America are forgotten or unknown to many present day flyers. Their deeds of daring helped to develop present day aircraft and their bravery was only matched by their painstaking research and work. They performed flights under conditions that would seem almost unbelievable today. Nevertheless, our planes of today evolved from those crude experimental and exhibition machines that at first used to make but short straightaway jumps at country fairs.

Probably the best known exhibition flyer was Lincoln Beachey. His looping and stunts of daring in 1914 opened up new angles of the game. He was followed by DeLloyd Thompson, Art Smith and others who strove to outdo one another in devising new thrills. Who of us can recall the Moisant Flyers, Miss Moisant, Alfred and John B. Moisant, Captain Hector Worden and Francisco Alvarez? Who remembers when Bob Fowler and Cal Rodgers made the great Coast-to-Coast flights? And can you recall the Garing Horace F. Kearny, Tony Jannus and his brother Roger, Jimmie Ward, Bud Mars, Hillery Beachey, Chas. K. Hamilton, Lee Hammond, Howard Gill, and others? Do you remember when Art Smith eloped in his plane with

Miss Aimee Cour? Do you recall the flying of Arch Hoxsey and Eugene Ely? Or perhaps you have forgotten the days of Floyd Smith, Captain Tom Gunn, Fred De Kor, and Didier Masson. Then there was Grover Bell, Max Lillie, and Harry N. Atwood. Others were Harry M. Jones, Nels Nelson, Ralph and St. Croix Johnstone, W. C. Robinson, Silas Christofferson, "Capt." Baldwin, Thomas Beckwith Havens. Charles F. Niles, Baxter Adams, W. Leonard Bonney,

Katherine Stinson used to thrill 'em at the fairs, along with Otto Brodie, Frank Stites, Hugh Robinson, Earl Sandt, and Phil Parmelee.

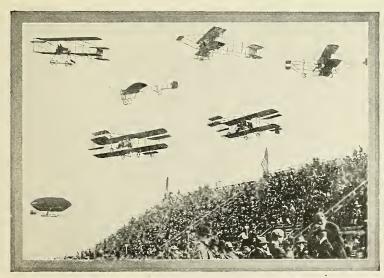
Katherine Stinson's younger sister Marjorie and her two brothers are also pilots. Eddie Stinson has flown more types of planes and spent more hours in the air than most pioneers in the game. He is now manufacturing the "Stinson-Detroiter" passenger airplanes. Jack Stinson learned to fly only four or five years ago. A real flying family.

In the pioneer ranks was Harriet Quimby, first woman to fly the English Channel, April 16th, 1912; quite as daring a feat as Gertrude Ederle's recent cross-channel swim. Miss Quimby took part in many of the early American air meets. Ruth Law, "Queen of the Air," thrilled the spectators with her clever handling of the old Wright "Model B."

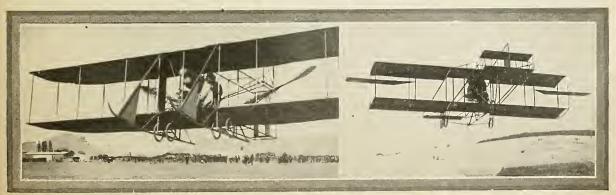
Those were the days of smashups which were daily occurrences. Breaking wood was nothing! Taking off trom ploughed fields, rough fields and muddy fields was a duty, as most fairs had contracts that read, "No flightno pay!"

Among the big exhibition concerns of those days were

the De Vaux, Curtiss, National, Benoist, American and Mills Aviators: Farnum T. Fish, Chas. F. Walsh, Lester Weeks, William Hoff, Andrew Drew. Thomas Aviators, Heinrich Aviators. Dewey Flyers, C. Livingston Wiggins, Oscar Brindley, A. C. Beech, Moisant International Aviators, Baldwin Flyers, Walter Brookins, Young Aviation Company, and others. An appreciable measure of the success of present day planes can be traced to the pioneer work of exhibition flyers.



Composite photo by J. W. Montee of the first air meet in America, 1910, Dominguez Field, Los Angeles. Two Farmans, a Bleriot and three Curtiss airplanes and the Baldwin exhibition airship are shown.



Typical exhibition planes of 1910-Bob Fowler's Wright Model B and Glenn H. Curtiss in his Gordon Bennett model.

## ACROSS CANADA BY SEAPLANE

▼ VER since aviation in Canada became a reality the subject of I the most suitable type of airBy C. Higginbottom

ing trip, with no Government or service behind it, and Squadron-Leader Godfrey's presence is explained by the fact that

Canadian aviation. It was a sport-

craft to use for flying across the peculiar kind of country which characterizes the Dominion has been argued incessantly by authorities in aeronautical circles. It was always contended that the seaplane was the ideal type to use when flying from the Atlantic seaboard to Lake Winnipeg, where the almost unbroken chain of waterways gives way to rough and mountainous country. Beyond this point the type to use proved a veritable bone of contention.

In 1920, Lieutenant Colonel R. Leckie and Major B. Hobbs left Halifax, Nova Scotia, in a Fairey float machine to fly across Canada, but after numerous vicissitudes they only reached Lake Winnipeg, whence the mails and messages which they were carrying were taken by Captain W. Thompson to Vancouver in a DH 9A machine. This flight proved that it was possible to cross the country by air, but the last leg of the journey, over the Rocky Mountains and throughout British Columbia generally, was thought to be too precarious for a machine with a wheeled undercarriage.

No further attempt to fly across the country was made until this year, when Mr. McKey, American sportsman and aviator, accompanied by Squadron-Leader E. Godfrey, Royal Canadian Air Force, of the air service headquarters, Ottawa, landed in a Douglas seaplane at Jericho Beach, Vancouver, British Columbia, on September 19. The machine-miles they had flown were approximately 3,600, the time taken to cross country was nearly six days, and the total flying time was 36 hours 52 minutes

They had attempted to break no records and so unostentatious was the flight that it was a little time before the general public realized that this was the first trans-Canada flight with one machine and one crew in the history of

Mr. McKey, who flies for a hobby and who is the owner of the seaplane, extended an invitation for any officer of the C.R.A.F. to accompany him. The Squadron-Leader was given permission to go because it was considered that a seaplane flight across the Dominion was interesting from an experimental viewpoint, and, further, as this officer had had much experience in flying over the different sections of the country en route, it was considered that his knowledge of the disposition of R.C.A.F. stations, suitable landing places, and difficult flying country would be of great value.

The Douglas seaplane was equipped with dual controls, and it was therefore possible for the two pilots to equally share the piloting throughout the whole of the trip. All along the route from Montreal to Vancouver, R.C.A.F. stations were used for refuelling and general maintenance. Every attention and courtesy was extended by the personnel of these units. Little trouble, however, was experienced with the machine, and the Liberty engine behaved perfectly until within a short distance of Vancouver when leaks developed in two of the cylinder jackets.

Ideal weather marked the start from Montreal on September 11, and before darkness overcame them the aviators had reached the seaplane station at Ottawa. Here an overnight stay was made. The next morning was still clear and sunny, and they took off in the hope of reaching Sudbury that day, but they ran into rain storms and high winds and were compelled to land on a small lake.

Stormy weather continued throughout the day, and it was not until September 13 that Sudbury, Ontario, was reached. From this point (Continued on page 483)



Photographs courtesy Royal Canadian Air Force



Photographs courtesy Royal Canadian Air Force.

Views of the Canadian Rockies' snow capped peaks, dense forests and deep ravines flown over by the Douglas seaplane. (Top) Castle Mount, Alberta. (Center) Mount Assiniboine, Alberta. (Bottom) Gold Range peaks, British Columbia.

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#### BRITISH SEE THE TRUTH

HILIP MANSON'S suggestion that an air-tourist line be established between the United States and Bermuda is regarded by Bermudians with mixed emotions, and for reasons which it might do many less farsighted Americans good to ponder over. The Englishman plainly sees not only his first line of offense but his first line of defense already in the air. We quote from the ably edited Royal Gazette and Colonist Daily:

"The petition of Mr. Philip Manson and others for incorporation as a company for providing transportation by air between the United States and Bermuda will surprise no one familiar with the recent development in aviation, and was even expected by a few who know Mr. Manson's enterprise and foresight. . . . We should be surprised if his latest scheme is furthered by legislative help. Air Service to our mind is more than a commercial undertaking. It is strongly linked up with the bigger question of Imperial Defense. English aviation is not as strongly supported as it should be. We have machines inferior to none, aviators superior to any. But the fact remains that in the air, England is not supreme. Now that aviation has developed so far as a fighting force, it is a decided weakness that the usefulness of the Fleet should be largely diminished unless another branch of the forces is also adequate.

"So that we hold that if Bermuda is to permit or encourage an Air Service it should be purely British. It should be capable at any time of forming part of an Imperial scheme, to say nothing of helping the present campaign for encouragement of British industry.

"It may savor of ingratitude to refuse Mr. Manson his petition, but it would be folly to overlook the bigger

factor involved."

#### BE PREPARED

IR SECRETARY OF WAR, F. Trubee Davison, in A an address delivered in Philadelphia during the American Legion Convention, sounded a solemn warning that should be heeded by those in the aeronautic industry when

"Experts may disagree on details but all agree that an adequate air force is necessary to the success of future military and naval operations. A five-year program for air expansion has been agreed upon. But it is only a program. It cannot be realized unless Congress makes the necessary appropriation yearly for five years. We cannot sit back and rest. The American people must watch and determine if the job is being properly performed.'

In December the seventieth Congress will convene. The well-trained and well-paid lobbyists of both Army and Navy will be on hand en masse to see that appropriations for these services are not pared under President Coolidge's economy program and, if possible, to have them increased at the expense of everything else, including aeronautics.

Who will be there to look after the interests of the Air Services and commercial aviation? The last two Congresses with their almost continuous investigations of air

matters developed few informed friends of air progress. The failure of the N. A. A. to do the work it should

have done, and which was expected from it, makes us fear that not much worth while assistance will be forthcoming from that source under its present weak leadership.

It is hoped that at least one of the newly appointed Air Secretaries will have sufficient courage to buckle on his armor, as did many a knight of medieval ages and go after the dragons in their dens, waging a fight on behalf of the millions of Americans who believe that the Air Services and commercial aviation have been conspired against for selfish and unpatriotic reasons.

If the five-year program is to be carried to ultimate and complete success and to embody such changes as time and experience will prove to be necessary, there must be on hand in Washington a legislatively trained, well organized and fearless group, not subject to court-martial or banishment to Guam, and prepared to fight the imminent battle.

You of the aeronautic industry, anxious to see it advance in accordance with its known potential importance, remember Secretary Davison's warning before it is too late!

The fight must be won. You owe this to yourselves and the next generation. Your patriotic duty is clear.

#### EXPERIENCE HAS TAUGHT

NEWS release issued October 20th, by Postmaster General New says:

"Postal officials and postage rate experts are concentrating their efforts toward the fixing of a universal flat rate of postage for the transportation of air mail to replace the cumbersome, involved and conflicting air mail rate structure

"It is expected that the basis for the proposed flat rate will have been decided upon and placed in effect by the time the Government operated air mail lines are taken over by private contractors."

By all means put the operation of the air mail in the hands of private contractors as soon as possible. It will be handled more efficiently and more economically, and will more quickly reach the maximum of service required to make it function for the benefit of all the people all the while.

It is true that so far private contracting operators have not been making money from their operations; the pioneers in radio, motion pictures and railroading did not make money in the early stages of these industries. All new businesses must be "sold" to the public before they can be profitable.

The performance of actual service will guarantee success, but both time and money—sometimes quantities of both—must be invested before real service can begin. This now is realized and admitted by air mail contractors. Modern flying equipment is essential to a rapid growth of volume. This will come when the rate is made so that payloads are carried on every trip. Passenger traffic, when it starts here, will help increase receipts, but enough first class mail should be available to make passenger carrying unnecessary if the rates are in accordance with the requirements of the nation's progress and welfare.

Postmaster General New and his Second Assistant Glover have endeavored to give every possible encouragement to the development of the air mail, and their efforts to reduce the expenditure while at the same time improving service are refreshing in an enterprise of which the yearly deficits have been almost as certain as the proverbial death and taxes.

Experience is the greatest teacher. But those that profit by it are unfortunately few.

# A NOD AND A WINK

At the Gnus

T seems as if the boys in New York City are just a little mite smarter than the boys any place else. We have an eleven-year old boy here who has been breaking into the gnuspapers with a lot of publicity, and getting right on the front page with the Hall-Mills collection of willing witnesses, Peaches and Daddy Browning, the simplex and complex of matrimony, and the Roumaniacs who were getting

thrown off Queen Marie's train—it was harder to stay on that train than on the back of a greased pig. And this eleven-year old boy barged right into the middle of this mess of national gnus, all on account of writing a letter to Secretary of the Navy Wilbur on the subject of air defense. Of course, Wilbur has been getting letters on that subject ever since someone absent-mindedly pushed him into the job of running the Navy, but he's never paid any attention to them. However, this letter was remarkable in that it came from an eleven-year old New Yorker interested in air, and it created sort of a stir when Wilbur showed it to his 'air dresser.

"Don't it beat Hell!" I imagine Wilbur exclaimed, or words to that defect. "Why, even the kids are getting after me now. Wouldn't be a mite surprised if I had to do something in the air department before long. Well, I'll do anything but ride." Then I suppose he called in Professor Warner, who is Assistant Secretary for Airand it sure needs some assistance—and told him to go draw another airplane, as the flying boys were running short of planes, what with the DHs wearing out, and the F5s getting water-logged, and the tails all vibrating loose on the Martin MO1s, and the engines falling out of the SC2s, and one thing or another, which left the boys hardly anything to fly around in but Marmon sedans. So the good old Prof. got out his non-collapsible, reversible, Socony-lubricated rubber slide rule and a pair of dividers, and sat him right down and drew the prettiest airplane you ever did see. So America is saved again. And all on account of this New York child of tender years-years being about the only thing in New York that is any ways

According to the gnuspapers this lad-and as neither Bruno and Blythe nor myself are publicity agents for him, I won't mention his name—this cherub said to his father, "Father, I cannot tell a lie; I think we need a bigger air force." "Just leave out that word 'bigger' and you'll be right. Let it go as 'We need a air force,' because at the present minute we ain't got any," said the brave father, who was a Yale graduate and got all his suits at Gimbel's. "All right, old horse-face," agreed the engaging child, with all the delicacy of feeling common to a New York son when talking to a New York father. "Let it lay as you lay it, back number. I'm gonna sit right down an' write a coit note t' dis boid Wilbur, an' tell him wot de lads on T'oity-t'oid Street and T'oid Ave'noo t'inks about air forces whilst dey's sittin' on d'coib watchin' d'skoits hoitle past." "Go to it, kid." said the father, turning from the sports page to the comic strips, which is all that gets read in New York, "an' as dis boid Wilbur is in de navy, be sure youse writes wit' a Waterman."

So little Izzy Kabitznick Maloney—there! I let jit slip out—scion of an old New York family who have been here for several degenerations, ever since they landed on

by baldwell

Plymouth Rock and Rye from the good ship Pilsudski of Czecho-Sapolio, sat him right down and wrote to Wilbur as one man to another. "I think we need a bigger and better air force," Izzy wrote in Yiddish-Irish-Polak-American, which is the standard lauguage of Hokumville-on-the-Hudson. "All other countries are getting ahead of us. Hoping that something will be done to remedy the situation. Yours,

Izzy Kabitznick Maloney, 2nd."

Of course, when this letter got to Washington it caused consterpation among the officials. It just went to show that even the children were getting out of hand. Nobody had paid any attention to letters from grownups regarding air defenses. In fact, most of those letters were written in words of more than one syllable, and were therefore over everybody's head. But when a child wrote to them in small words, they could get the meaning, which was very disquieting, for, as the good book says, "Out of the mouths of babes and suckers cometh wisdom." The general opinion is that we should get Volstead, who soaked us with the eighteenth amendment to prevent soaking, to think up a nineteenth one to prevent thinking, which is harmful to a democrazy.

However, even if Izzy's letter did get in the gnus, it won't do any harm. He can write until he's black in the face with splattered ink, and they won't increase the air force. You see, this Izzy is only eleven, so he ends his letter optimistically, "hoping that something will be done." When he grows up into a typical New Yorker with a cigar in his face and a flask on his hip he'll finish this letter, "knowing that nothing will be done, except the tax-payers." That will show that he's got a correct grasp of the situation, at last.

SEE by the gnus that a wealthy woman who liked the writings of A. C. Benson, entered into a long-distance correspondence friendship with that English author, and eventually gave him a fortune for a birthday present. We could do with a few more women like that. And I'll say right here that if any lady, or any gentleman, likes what I write, my birthday is January 13 every year. They may write, "Dear Cy: I like your stuff. Enclosed please try to find my check." (I pull that crack here so some ape won't work it on me.) To date, I've had letters from all over the country from people who liked or who didn't like what I wrote-they run fifty-fifty. And not only did these correspondents fail to enclose a fortune; they failed to enclose stamps for my reply. So I'm in the hole on this longdistance platonic friendship business. Not that I mind; I like to hear from the boys-and the girls-and I always reply. One girl wired that she was visiting New York and would let me take her out to dinner. There's an optimist for you! If she only knew the difficulty I have taking myself out to dinner she'd have brought her own lunch.

Now, I don't want to have to speak of this matter again. There's no reason why America should lag behind England in helping literary and semi-literary people. Right now there are seventeen of us writers living in Central Park with the tame deer. I sleep with Chesterfield, the old buck of the herd, and I'm not satisfied. He's very restless in his sleep; I think he has bad dreams, or something. James Warner Bellah sleeps with (Continued on page 477)



Lt. Dougld F. Fritch and J. W. Montee. 64 year old flyer, in the Douglas 02 Army Air Corps plane in which they flew across the continent.

# DAD FOLLOWS SON'S FOOTSTEPS

VER since my son, Kenneth, won the prize for the "On-to-New York" race by his flight in his 100 h.p. plane from Santa Mon-

ica to New York, I have hoped to fly across the continent also. I have at last realized my ambition and flown from the Pacific to the Atlantic as a passenger in a Douglas Observation plane, one of the seventy recently completed at the Douglas factory at Santa Monica and delivered under their own power by Army pilots. Lieutenant Donald F. Fritch was the pilot of this particular Douglas plane; Mitchel Field, New York, its destination.

Comfortable as a journey in a Pullman. Inspiring as a poem by a genius, a painter's masterpiece, a magician's marvel. Swift as that magic carpet that I read about in the "Arabian Nights" when I was a youngster crossing a fraction of the same vast territory in a prairie schooner drawn by oxen at three miles an hour.

After my aviator son had taken me up for several flights six years ago I knew that he had been thrust, by the war which had taught him to fly, into the greatest development of modern life. About that time the suggestion arose that I leave my California home for a visit to New York. "Not till I can fly there," I replied.

Now I have had that splendid, that once incredible experience as the guest of the United States Army Air Corps. Starting from Clover Field, Santa Monica, we crossed the continent by way of Tuscon, Ariz.; El Paso and San Antonio, Texas; Fort Sill, Ariz.; St. Louis, Mo.; Rantoul, Ill.; Dayton, Ohio (McCook Field), and thence to New York. The best time that the trains make is about five days. We made the journey from Santa Monica to Long Island in 30 hours and 20

By James W. Montee



"Daddy" Montee with his sons, Kenneth, Ralph and Harold, All of them are commercial flyers.

minutes actual flying time.

We left Santa Monica on a delightful day and came through splendid weather all the way to New York City,

having no discomforts of whatever sort. All our takeoffs and landings were perfectly smooth and as easy as starts and stops upon a railroad train. The journey was as unexciting and twice 25 clean and picturesque as any other means of travel could have afforded. Our highest altitude during the trip was 8,000 feet as we came over Arizona and Texas. Rightly but not awkwardly dressed we suffered not a particle from the cold.

me on terra firma, immediately after we landed at Kelly

Field, San Antonio,—not in the air. After I had climbed out of the plane, a motor cycle ran into me and broke my arm. First thing I knew about it was when I woke up in the hospital. But they didn't keep me there long. Ours is a flying family and none of us have been even

slightly hurt. When fate at last decreed that I should have an accident, it happened on the ground. We don't get hurt aloft because we are safe and careful flyers, trained and sane.

Mother long since passed her hundredth flight. My wife flies, my two sons are expert aviators with many thousands of miles in the air behind them and my young daughter is on the way to become a full fledged, officially acknowledged pilot.

I am sixty-four and made my first solo flight four years ago when I was sixty. I propose to keep on flying for the next twenty years. I don't suppose speed will be increased as rapidly in proportion during the coming years as it has been during the twenty which have just passed, but who knows?



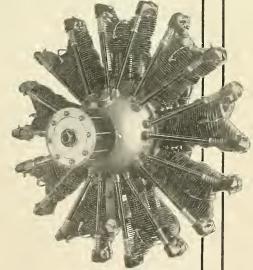
Colonel B. D. Foulois greets Montee at Mitchel Field.



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Into every engine is built the qualities which make for the fine performance and dependability so vital in both military and commercial flying.



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ON AIRWAYS MAPS

# THE YARNS OF "HELL'S BELLS" O'NEIL

HE last bottle is almost gone," said "Hell's Bells" O'Neil, "but there is one more yarn in it and here it is." He took a long swig and leaned back in his chair.

"There is one thing about the Victoria Cross that you ought to know before we start. It is jewelry like all the rest of the stuff but it is good for you as well as your grandchildren. When you've got it, the only man who can punish you for your sins is the King himself and he's never done it yet because it's bad publicity to punish a V. C.

"Now this here fellow Smith

was a soldier first and a pilot second. He came to Stulton Downs 'drome from Bristol where he'd been sent from some infantry unit that was in the real estate business trading lots with the Hun up Cambrai way. Nobody knew anything about Smith and he wouldn't tell. Pretty soon he sees it's a party so he enters into the spirit of the thing, flies by day and drinks by night—keeping his own counsel and showing the boys how to do real constructive drinking.

"About the time he came, a lad crashed into a barn and a board with a nail in it caught him on the head, otherwise he would never have been hurt. Well, after the funeral, the O. C. decided that the cadets would wear crash helmets in future. There were about a dozen of the darn things in stores. The O. C. had them dragged out for use by the solo cadets.

"Now a crash helmet is a stupid thing made of leather and felt, that sits up on your head like a haystack. There were no straps to them, so the boys ran their handkerchiefs

through the loops and tied them under their chins. And there was cursing by day and night. First of all, the damn things sat so high on the kaydets' heads that they caught the backdraft and knocked off about ten miles an hour from the speed of a B E 2c, whereas a D H 6 wouldn't leave the ground at all if the pilot was wearing onewhich was probably a good thing at that. Secondly, if you had one on in the air, your head bobbed back and Cadet Smith, V. C.

#### James Warner Bellah

Aero Digest is pleased to announce that "Fear" by James Warner Bellah, which appeared in the Saturday Evening Post of November 6th, has been selected for "Best War Stories of 1926", and will be published shortly in book form by Small Maynard and Company of Boston.

A night flying story by the same author will appear in the Saturday Evening Post of December 18th under the title of "At 2:42 A. M." forth until your neck broke or you choked to death.

DECEMBER, 1926

"Naturally the boys began dropping them overside—quite by accident of course. Well, after the fifth one was lost, the O. C. smelled a putrifying odor in Denmark and posted a notice that the next one to go would cost the cadet who lost it just exactly two quid ten and sixpence.

"Now there was a tricky ravine about a mile from the 'drome as the cadet flies. All solo men were warned to avoid it by a wide margin for the bumps that grew above it were not nice to know. Also, if you took off over the ra-

vine and your engine konked out, you landed either on a rocky, pebbly strip of moor or else in sloping swamp land that was dotted with grass tufted hummocks. It was a God-given airdrome all right.

"Well, one day Smith's crash helmet works loose and ricochets overside from thirty-five hundred feet, just as he is circling to pass beyond the ravine. From the airdrome, his instructor sees Smith's nose dip suddenly down. He watches for a moment until he is sure that Smith is going to crash in the ravine, crack-up in the swamp or break his face in among the rocks. Then, when Smith has gone down out of sight, the instructor breaks out the Hungry Lizzie, jumps up beside the driver and starts hellbent for the crash meanwhile the surgeon grins and begins blowing up air cushions and cleaning his scalpels.

"The ambulance tears straight across the 'drome toward the ravine and when it gets to the edge, turns around and ambles back, for Smith suddenly takes the air from the other side, zooms over the trees, wobbles through the

bumps and comes in for a three point landing.

"The instructor walks up to him none too politely. 'Where the hell do you get this particular brand of stuff landing all over the lot?'

"Smith grins, 'Couldn't help it, Sir!' he says.

"'Couldn't help it?' yelps the instructor.

"'No!' say's Smith. 'You see my crash helmet dropped overside so I had to land to get it. I only busted the wing-(Cont'd on p. 482)



"Well, one day Smith's crash helmet works loose and ricochets overside from thirty-five hundred feet."



# rplane yo

Bohn Ring True Steel-back babbitt-lined bearings were especially designed in co-operation with the airplane industry for duty in airplane engines.

Bohn Products include Ring True Bearings, Bohnalite Castings, (both permanent mold and sand) and Nelson Bohnalite pistons.

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Using a motorcycle engine a high

speed of 60 m.p.h. is attained; climb

at the rate of 300

feet the first min-

ute; fuel capacity,

16 pounds, sufficient for a flight of

The Meteormo-

tor Model 72 is an air-cooled 4-cylin-

der X-type fixed

radial engine. It

develops 20 h.p. at

1900 r.p.m. Weight

complete with pro-

pounds. Fuel is

consumed at the

rate of 11/2 gallons

per hour and oil at

peller hub,

134 hours.

control system are of standard de-

sign; stick and rudder bar controls.

# THE IRWIN METEORPLANE

ESIGNED by J. Fulton Irwin for the man who loves the sport of flying, the Meteorplane produced by the Irwin Air-

By George F. McLaughlin

the purpose. It may be flown with any good engine from 9 to 30 h.p. which does not weigh more than 4 pounds per h.p. As standard equipment the plane is provided

with the Model 72 Meteormotor which is also a product of the Irwin Company. In fact all parts of the finished plane are produced by Irwincomplete engine, turnbuckles, wheels, tires and tubes; parts usually purchased readymade by even the largest builders of airplanes.

The Meteorplane Model M-T-2 is the latest development of the small plane originally brought out seven years ago. The Irwin - built first

plane, a pusher biplane with outriggers, was built in 1908. This experience has been a valuable background for the successful light planes now being produced-the Model CC-1 and M-T-2. The CC-1 has a two-foot greater span and a greater fuel capacity than the M-T-2 although resembling it in other respects.

This plane is designed to have a safety factor of more than 7 at all points. In flight it has no tendency to spin

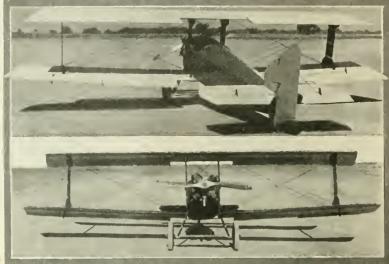
at stalling speed and is easy to handle and land with but little flying experience. It has been flown with practically every make of motorcycle engine although performing at its best with the specially designed Meteormotor.

The wing span is 20 feet. In the main planes the spars are of spruce, hollowed. Interplane struts are of I type built up of 3-ply wood; no incidence wires are needed. A feature about the attachment of the wings to the body is that in rigging up the ship they may be fastened at any point under the fuselage in order to balance the machine no matter what en-

gine is installed. Wing ribs are of yellow pine and spruce. The fuselage longerons are of ash. Box girder construction is used and 4-ply panels hold the body in shape. Wires are used to truss the frame from engine bulkhead to rudder post. The forward part of the body is cowled with sheet aluminum while the aft part is fabric-covered. The overall length of the machine from propeller to tip of rudder is fourteen feet.

In the undercarriage, the rubber-sprung axle carries wire wheels with 20 by 3 inch clincher tires. The tail group and





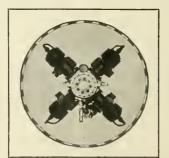
The newest model Meteorplane produced by the Irwin Aircraft Company.

½ pint per hour. Cylinders are cast of gray iron. The crankshaft is machined out and ground from solid, of heat-treated chrome vanadium steel. Crankcase is a silicon aluminum casting. Tubular connecting rods with steel backed babbit bearings. Fine grain cast iron pistons. Tungsten steel valves. In the main bearings 13/16 inch balls are used. A Zenith carburetor and Bosch magneto are used. The designers claim smooth running at all speeds with no undue vibration,

throttling down without stalling or when coming in for a landing and instantly responding to wide-open throttle.

The Irwin Company produces the completed planes ready to fly or can supply erection blue-prints and all the component parts ready for the amateur builder to assemble the plane himself. The latter plan gives the student an opportunity of familiarizing himself with the structure of aircraft and assures him a machine of which the design has been tried and tested.

Some of the performances and weights of the Meteorplane with Meteormotor installations are as follows:



Front view of the Meteormotor.

| Speed range                                    |
|------------------------------------------------|
| Rate of climb, first minute                    |
| Service ceiling                                |
| Gliding angle in 9                             |
| Range of action4 hours                         |
| Net weight of machine, empty                   |
| Weight of fuel                                 |
| Total weight of machine fully loaded425 pounds |
| Power loading                                  |
| Wing loading4 pounds per square foot           |
|                                                |

# 'AIRCO'

#### TWIN-MOTORED AMPHIBIAN

Watch for details of test flights in the next issue of AERO DIGEST



Four and six-passenger models closed and open. Capable of flying with full load on one motor.

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## COLD WEATHER ENGINE STARTING

F the many problems that had to be solved to insure the success of the flight of the Byrd Arctic Expedition to the North Pole one of the most important was that of starting and lubricating the three Wright J4 air-

cooled engines in the low temperatures encountered.

Consideration was given to various light-bodied oils which would remain fluid at low temperatures and which would permit of fairly easy starting under such conditions, but there were objectionable features to their use. Under full load operation the lighter-bodied oils would not seal the piston rings and maintain the high compression pressure in the combustion chambers necessary to secure full power output from the engines.

Leakage past the rings could be expected, which would result not only in a loss of power and higher fuel and oil consumption (items that had to be carefully avoided) but also would cause excessive dilution of the oil by this fuel and reduce its lubricating value. Such conditions seriously affect the operation of the engines.

Another factor which opposed the use of the lighterbodied oils was the high internal temperatures under which the oil would have to work when the engines were in operation. Although the outside air temperatures at starting and during the flying were extremely low-about 10 deg. below zero on the ground, and 32 deg, below zero in the propeller air stream at 3000 feet altitude—the air-cooled cylinders were so protected by an aluminum cowling that shortly after taking off the engines reached approximately their normal operating temperatures internally. The oil temperatures during the flight were all within a reasonable range of normal. As all oils thin out under heat to an extent dependent upon the character of the oil, it was decided that the lighter-bodied oils would be impractical as long continued flight would probably reduce their body to a point where lubrication might be impaired.

It was decided to use the oil best adapted to the lubrication of the engine under operating conditions, and a method was devised whereby easy starting might be accomplished

in low temperatures. The plan adopted was to use a method of heating the engines and to start with preheated oil.

The gradual heating of the engines externally before they were fired internally reduced the danger of too rapid expansion of the metal due to change in temperature from that of the cold air to the temperatures developed by operation. This procedure further insured positive action of the engine cam followers which, if supplied with a cold viscous lubricant. would probably cause a lagging or sticking of

By G. O. Noville

Lubrication Engineer, Byrd Arctic Expedition the valves and sluggish interrupted action of the engine generally.

Preheating the oil was a simple matter and the same procedure was adopted as had previously been employed in Alaska, Greenland and Labrador on the U. S. Army

Round-the-World Flight and on other flights where low temperatures were encountered. Gargoyle Mobiloil "B" was supplied in five gallon cans by the Vacuum Oil Company and a requisite number of these were placed in a circle around an open wood fire. The cans were rotated so that the contents became thoroughly heated.

A device was arranged to completely hood the engines and apply a steady flow of hot air which would circulate around the engines and pass on to warm the oil tanks and oil lines enclosed in the engine nacelles.

This heating device was made of eight-ounce fire-proofed canvas. Hoods were designed to fit securely over each engine. From the bottom of these hoods, flues or ducts about a foot in diameter were carried to within a few feet of the ground. Covering the engines and applying the heating units is only a matter of a few minute's work. Three gasoline pressure torches were placed at each flue, starting a flow of heated air through the hoods, warming the exposed metal parts of the engines. After circulating around the engines the hot air escaped through vents and followed the back cowling openings into the engine nacelles where it heated the oil tanks, oil feed lines and discharge lines.

At ten degrees below zero, fifteen minutes after the heating operation was begun the engines were perfectly free and could be turned easily by hand and were started without any difficulty on the first turn of the crank. Starting was accomplished with greater ease than is usually the case under summer temperatures. The oil immediately built up a normal oil pressure, instead of the excessive and dangerous pressures encountered when the engines are started with cold oil even at favorable air temperatures.

This method of preheating the oil and engine is neither difficult nor dangerous. There are a few precautions which

must be observed, however. The gasoline line should be shut off at the tank, and the carburetor and line drained before the hood is applied. A fire extinguisher should be on hand.

The conditions under which this starting was accomplished were, of course, abnormal, but this method of starting, permitting the use of the most efficient oil to meet the wide-openthrottle operating conditions, proved to be so simple and so practical that its description will interest those who may be confronted with such lubricating problems.



Starting the engines on Byrd's plane before the North Pole flight.

Corning, California





# Hits the Bull's Eye of Commercial Aviation

# Why this engine will interest you

An engine designed and built solely for commercial use. Constructed with the closest adherence to specifications for material as laid down by military engineers, and incorporating the three outstanding and fundamental requirements of commercial aviation-Power-Economy-Simplicity.

140 horse power at 1850 r.p.m. and weighing only 325 pounds!

#### Economy:

Tests of over 700 hours have set the gasoline consumption at less than 8 gallons of aviation gasoline per hour!

#### Simplicity:

And last but not least the simplicity of this engine will impress the most exacting pilot. Possessing an "L" type head, eliminating troublesome overhead mechanism and making possible a valve grind in less than 20 minutes per cylinder, by simply removing the cylinder head. A two-piece crank shaft with solid master rod bearings of exceptionally large surface. Three-piece crank case with all ground joints and many other features which, combined, result in an engine that it is possible to disassemble and reassemble in *less than four hours!* 

Sole Distributors for Waterhouse Aircraft Corporation

MAIN OFFICES:

Klamath Falls, Oregon

Glendale, California

# WESTERN NEWS



A new Douglas observation plane with an air-cooled Curtiss Type 1454 engine.

#### NEW DOUGLAS PLANES

I N the new and improved Douglas 1927 model O2-E, shown in the accompanying illustration, the gasoline tanks have been removed from the wings and a single 110gallon tank placed in the fuselage ahead of the pilot. The tail surfaces have been redesigned to give better control. The landing gear has been lowered. The wings are equipped with flat type ailerons which also give better control in maneuvers. Considerable experimentation has been carried on with it, both by Douglas test pilots and Army Air Corps pilots.

Mr. Douglas and Lt. Carl Cover flew it to some of the southern flying fields in October where numerous pilots tried it, commenting favorably on it. It was then flown back to Santa Monica and more improvements were made, and from there to McCook Field for inspection and tests.

The air-cooled observation plane pictured on this page has been built by the Douglas Company for the Army Air Corps around the Curtiss 1454 air-cooled engine. Tests are now being made of the ship.

The Douglas Company also has under construction an all metal twin-engine (aircooled) bomber for the Navy Department, which will be finished about December 1st.

#### GLENDALE NOTES

WITHIN the next few weeks a petition will be presented to the Glendale City Council asking that body to call an election to determine whether bonds shall be issued for the purpose of purchasing ground on which to establish a municipal airport, and sentiment has been growing to such a degree in favor of this project that it is believed that the taxpayers of the city will approve the issue of the bonds.

Glendale has an airport now, but it is too small to accommodate the larger ships or airplanes that land at a high rate of speed. The sponsors of the project to secure land on which to lay out a municipal airport plan to purchase the twenty acres now devoted to the airport and also another twenty acre tract adjoining it, so that forty acres would be available for a runway and landing field. and also that ground would be secured on which to establish airplane factories or plants allied with the manufacture of airplanes. The Glendale Chamber of Commerce is one of the most active agencies in supporting this plan.

There are at present three factories in oneration at Glendale. Waterhouse Aircraft. Inc., manufacturers of the Roamair and the Cruzair, need more land for their plant if they are to carry out their program of expansion; Kinner Airplane and Motor Co. has also mapped out its plans for enlarging its plant to permit greater production; and Thomas B. Slate, manufacturer of the Slate dirigible, plans to start work immediately on a new dirigible to replace that which he lost in a gale of wind on October 30 The C. F. Story plant, the largest manufacturer of airplane propellers on the Pacific coast, is also located a short distance from the Glendale airport, and this firm also calls for more room to expand.

#### LINCOLN STANDARD BOOSTER TRIP

TWO Lincoln Standard five-passenger planes left Lincoln, Nebraska, recently on a five months' Booster Trip for the promotion of commercial aeronautics in general and for the purpose of boosting Lincoln, Nebraska, as an aviation center for the midwest. The trip is in charge of H. F. Morris, assistant sales manager of the Lincoln

Standard Aircraft Company. The pilots are Lieuts, W. B. Atwell and E. R. Moore, both ex-service men. Their route to the West Coast is by the way of Amarillo and Lubbock, Texas; Roswell, New Mexico; El Paso; Tucson and Phoenix, Arizona.

A similar trip made last winter proved very successful in bringing the possibilities of flying in direct contact with the people and also in promoting the Lincoln landing

The new flying field is located south of Lincoln on the cement highway, one and one-half miles directly south of the penitentiary. All pilots will receive prompt service at this field at any time.

The Lincoln Standard factory is running full blast and at the present time are completing twenty LS-5s, a portion of which are sold and will be delivered soon.

#### DOUGLAS DELIVERED 51 AIR MAIL PLANES

By F. E. SAMUELS

THE Douglas Company has recently completed and delivered its fifty-first mail plane to the United States Post Office Department. These planes are the latest and newest equipment placed in service on the transcontinental air mail line from New York to San Francisco and will replace the antiquated DHs which have been used since the start of the Government air mail lines in 1918.

Due to the high altitude of the territory on the Cheyenne division the planes which are to be flown over this country are equipped with wings having 17 per cent greater area than those assigned to the other divisions.

The entire fleet of fifty-one planes was flown from Santa Monica to their various stations along the transcontinental route.

This was the largest order for planes for commercial purposes ever placed in this country. And although the first airplane was not completed until May 7th, the fleet was produced in less than 150 days, not withstanding production was also being maintained on orders for the Army Air Corps, Marine Corps and Navy Department as well as some foreign and other commercial orders.



The 1927 02-E Douglas Army observation plane now being tested at McCook Field.



# Greater Strength with Lighter Weight

Duralumin (with the strength of steel and only one-third the weight) is the foundation of this wonderful plane.

Add to this the Duralumin tail group that weighs but thirty pounds; the trussed tube fuselage with no wire rigging to add weight and need adjusting: the Duralumin tube with balsa wood streamline struts that cut down weight, too; the extra strong, shock absorbed landing gear with no heavy winding system; the entire ship streamlined from nose to leaf spring tail skid—and no wonder the "Air-King" makes such

quick take-offs, fast climbs and good landings.

Even though the "Air-King" weighs but 1,095 pounds empty, it is not a small ship. Wing area is 300 square feet; useful load is 850 pounds; 26 feet long, 8 2/3 feet high and with a 33-foot span it is just the right size ship for small landing fields, commercial work, student training and pleasure use.

Its price, too, is as great a surprise as its mechanical superiorities. Find out all about this far-in-advance "Air King."



NATIONAL AIRWAYS SYSTEM,

LOMAX, ILL.



Kenvon, retiring Clover Field, accepting Aero Digest Cup from F. E. Samuels for presentation to Jack Frye, winner of Speed Race in W. F. W. Thunderbird, at Calpet Air Meet.

#### CALPET AIR MEET

By CHARLES H. BIRD

S PONSORED by the California Petro-leum Corporation, on Sunday. November 7, an air meet at Clover Field, Santa Monica, full of thrills and broken records, paid tribute to the presence of Floyd Bennett and the giant 3-motored Fokker monoplane, the Josephine Ford, in which he and Commander Richard E. Byrd flew over the North Pole.

The elimination trial for a West Coast altitude record for ships of 100 horse power or less started with six entries: Paul Richter in the Alexander Eaglerock: Art Burns in the American Aircraft Corp.'s Waco: Jack Frye in the W. F. W. Thunderbird: Eddie Bellande in a Travel Air and a special entry Kinner sport plane; and Burdett Fuller in a Swallow. The three to qualify for the trial were the Eaglerock, Waco and Thunderbird.

Paul E. Richter, piloting the Eaglerock, climbed to a height of 17,846 feet, establishing a record for planes of 100 horse power or less, and the first official record for the West Coast for any plane. Art Burns in a Waco and Tack Frye in the Thunderbird placed second and third, reaching 15,878 feet and 13,284 feet respectively.

Mrs. Jacques Vinmont, wife of the president of the California Petroleum Corporation, presented the Calpet Perpetual Trophy cup to Paul Richter, president of the Aero Corp. of California, which he will hold until his record is broken.

The audience was entertained by the Clover Field Army Reserve flyers and Navy pilots from the Naval Air Station at San Diego in formation flying, and a number of stunt flyers. The thrill of the day was the rescue of Miss Bobby Chase, who was making a parachute drop from a plane piloted by Kenneth Montee. The control cord on the bag that holds the parachute failed to work and she was left suspended 30 feet below her plane. Montee circled low over the field for help and Fred Osborne and Al Johnson went to her aid. Osborne tried to swing her up on the wing of his plane but failed so he made a change from his plane to Montee's and cut the cord releasing her parachute. A sprained ankle from landing was her only injury.

The Byrd North Pole plane and the Fokker Universal monoplane circled overhead during the meet.

A dense fog coming in from the ocean caused the Free-for-All High Speed Race to be postponed until Sunday. November 14. However, as all of the parachute jumpers were willing to make low jumps the meet was finished with a to-the-mark parachute jumping contest. There were nine entries for this event, which was won by Miss Jacky Dare, 138 feet from the line, with Van Loan second, 244 feet, and Fred

(Continued on page 446)



TOTAL STREET, STREET,

Mrs. Jacques Vinmont presenting Calpet Trophy to Paul Richter, who, in the Eaglerock, set new altitude record. Augustuck, set new altitude record.

# \$10000

INSURES SPRING DELIVERY

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## **ALEXANDER** EAGLEROCK

AND FREE \$50.00 DUAL CONTROL

Delivery date may be set in February. March or April if deposit, to be applied to the purchase price, is made-

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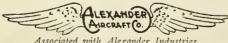
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DEALERS WITH DEMONSTRATOR EAGLEROCKS ON THEIR FIELDS Dealers with Demonstrator Eaglerocks on Their Fields
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Illinois—Sievert Aircraft Corp., Chicago
Oklahoma and Texas Panhandle—Southwest Airplane Sales Corp.,
Virginia and North Carolina—I. S. Charles, Richmond, Virginia
W. Missouri and E. Kansas—Bennett Eaglerock Sales Co.,
E. Missouri and Arkansas—Bridgeton Aircraft Corp., St. Louis, Mo.
Wyoming and Montana—Wyoming Airways, Casper, Wyo.
Western Kansas—C. E. Steele, Dodge City, Kansas

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K.W. Montee Aircraft Co. Clover Field

SPECIALIZING IN

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AERIAL SURVEY and

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# THE ADVANCE AIRCRAFT COMPANY

largest producers of commercial aircraft in America announce price reduction on the improved

WACO-9

three-seater

\$ 2 2 5 0 at Troy, Ohio

More WACOS are now in service for profit and pleasure than all other ships now in production in America.

# THE PERFORMANCE MADE THE DEMAND

Write for details

THE ADVANCE AIRCRAFT COMPANY TROY, OHIO

Osborne third, 340 feet from the line,

As neither Army or Navy pursuit planes could be secured for November 14, the committee decided to make the Free-for-All High Speed race for planes with 100 or less horse power.

The race was run over a two-mile triangular course, ten laps, in full view of the audience at all times and was conceded by every one to be one of the most interesting races' ever held at Clover Field.

Jack Frye in the W. F. W. Thunderbird covered the course in 11 minutes and 12 seconds, winning first prize-the Aero DIGEST cup, a gold medal and 300 gallons of Calnet gasolene. The second prize, 200 gallons of Calpet gasolene, was won by Frank Clark, flying Doc. Whitney's Waco; time, 11 minutes, 29 seconds. Third prize, 100 gallons of gasolene, was won by Paul Richter, flying the Alexander Eaglerock; time, 11 minutes, 37 seconds. The fourth ship, another Waco, made a time of 11 minutes, 52 seconds. The difference in time between the winning plane and the last plane in the race was only 40 seconds. As the course was short and the turns close together the crowd kept on their feet cheering from start to finish.

After this race there was parachute jumping to-a-mark by Al Johnson, wingwalking and acrobaties by Joe Osborne and Gladys Engle on Bob Lloyd's plane and an exhibition of up-side-down flying by Art Gobel. The Universal Fokker was on exhibition all day.



Major Howard Nichols, president Kern County General Airport Committee.

#### BAKERSFIELD AIRPORT

By Scholer Bangs

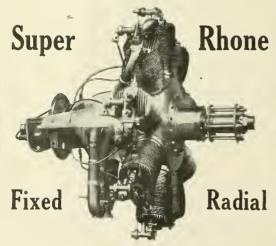
WHEN Floyd Bennett of North Pole Flight fame, piloting Commander R. E. Byrd's p'ane "Josephine Ford," hurled a garland of flowers onto a smooth, triangular field north of Bakersfield, Kern county, Calif., on November 5, the country's first county airport was officially christened Bakersfield Airport. Ten thousand persons witnessed the simple dedication ceremony, and cheered the polar plane, which was on its tour of the United States under the auspices of the U.S. Department of Commerce and Daniel F. Guggenheim Fund for Promotion of Aviation.

Six miles north of Bakersfield Bakersfield Airport is clearly marked beside the state highway and trunk railroad lines on the northwest side. Paralleling the highway is a 250-foot galvanized iron hangar, a combined automobile and airplane service station, and a small weather house from the roof of which is flown a wind stocking. At the southern end of the hangars are fixed flood lights which illuminate the field for night flying. Weather conditions permitting all landings are made from south to north. toward an oil tank farm that is easily seen from the air. Take-offs are likewise from south to north, and a quarter of a mile beyoud the tanks is an open prairie that may be used for an emergency landing in case of difficulty in the take-off.

The development of Bakersfield Airport, which has received the financial backing of the Kern County Chamber of Commerce, has been brought about by the foresight and initiative of the Kern County General Airport Committee of the Chamber of Commerce under the leadership of Major Howard Niehols, president. An airport executive committee was formed, and is active today in supervising the flying field. Don Cardiff is inspector in charge with an assistant, Amos Collins, as field manager.

Field rules have been printed, and a registration kept of all local pilots and planes as well as commercial and visiting pilots landing at the field. Nine planes are owned and operated by local pilots who have rented hangar space on the field.

#### BOOK YOUR ORDERS NOW FOR EARLY DELIVERY



# Air-Cooled Aircraft Engine

We offer the commercial aviation field this new engine at a popular price.

Low maintenance cost. Surpasses all others in ease of operation, installation, service and repair.

Write for Booklet A. D. 1.

# Super Rhone Engine & Flying Corp. Exclusive Sales Agents

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Announcement—

The exclusive sales
of the

Eckles Valve Action Assembly
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for Curtiss OX5 motors
is now being handled by

The Aero Corporation
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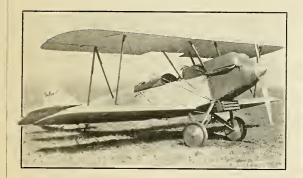
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## The 1927 SWALLOW

### AMERICA'S FINEST COMMERCIAL AIRPLANE

Designed by W. M. Stearman





\$2485 - OX5 At Factory

The oldest manufacturer of commercial airplanes in America announces a new 1927 model. This airplane is equipped with split axle landing gear, new Hartzell propeller, adjustable stabilizer, streamlined wires and has a reinforced steel fuselage. The high factor of safety is maintained with any motor up to 220 hp. Both cockpits are fully upholstered and have comfortable seating arrangement. The 1927 Swallow has no competition in quality and performance at low cost. It reflects the stability of a dependable company.

Watch Swallow Influence on All Airplanes for Years to Come

# SWALLOW AIRPLANE MFG. CO. WICHITA, KANSAS.

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F. L. Barchard 5737 N. Talman Ave. Chicago, Ill.

Davenport Airport Co.
Division St. & Duck Creek
Davenport, Iowa

#### CALIFORNIA-HONOLULU FLIGHT PLANNED

THE California Development Association have just completed preliminary arangements for a California-Honolulu flight. The flight which will take place in the near future will be financed by Californians. Fifty thousand Californians will be asked to each donate one dollar, which will be collected through the newspapers in every territory in California. The plane—a Douglas transport—pilots, crew and everything connected with the flight will be furnished by California. Every city and town will assist in putting over the flight.

#### "GETTING IN"

"H ARD headed business men will lend their sympathy but not always their money to aeronautical ventures," said J. B. Alexander, vice-president of Ryan Airlines at a luncheon of air-minded business men of San Diego. He also answered an often asked question, "How can I fit in the scheme of this big new industry?"

"I can see a picture of an ideal dealership with a good field leased,—a hangar with an office and one demonstrator; a new hangar empty ready for a new ship to occupy it; a thriving little business training students with a good instructor and a good mechanic; every time a ship is sold, a hangar leased and a new one built for the next new customer; eventually a long row of individual hangars; every plane a constant source of revenue—gas, oil, maintenance, overhauls, fair rentals

at a profit; a place where real prospects, men with substantial interests realize permanency and service as inducements to own the zenith of transportation and sport—the modern, economical airplane.

"Today, this is a virgin field, an untouched, dormant, potential market for the new type airplane. The combination of a man experienced in aeronautics, a man familiar with selling, with finance available to lease a field, erect two hangars, a demonstrator, and a factory connection, an appropriation to carry a display ad twice a week in the local paper, will sell more planes than the larger factories can contract to deliver in practically any American city.

- "1. Good training in commercial aviation.
  "2. Real experience in retail unit market-
- ing.
  "3. Available finance of ten to fifteen thousand dollars

"A man possessing one or all three requirements will realize a real return on a reasonable investment. But ninety-nine out of a hundred aeronautical ventures fall short of success for lack of adequate capital."

#### NEW AIRPLANE WHEELS

C HARLES A. WARREN, Los Angeles airplane supply man, has just taken the West Coast agency of a new wire airplane wheel of unusual strength and made to fit 29 x 4.40 balloon tires, which can be purchased at any auto supply house or service station. These wheels fit any size axle up to 2½ inches, outside diameter, and should be of great benefit to fivers.

#### AERO CORP. AGENCY FOR ROCKER ARMS

NOBLE ECKLES, who has recently developed a ball bearing rocker arm for Curtiss OX-5 motors and a heavier type of lynite rocker arm for larger motors, and who is at present developing a supercharger which is almost ready to market, has appointed the Aero Corporation of California the exclusive agency for his products. This will give Mr. Eckles more time to carry on his experiments. The rocker arm is giving entire satisfaction to every one who has had them installed.

#### LAASS ON WEST COAST

JACK LAASS, pilot of the Driggs "Dart" on the Ford Tour and on its exciting trip over the Alleghanies to the National Air Races at Philadelphia, is now in the sales department of the Travel Air Mfg. Co. and is touring the West Coast promoting sales for his company.

Undoubtedly Jack will make a number of new friends for Travel Air on the Pacific Coast and he will prove a valuable acquisition to the selling force of that organiza-

#### 6610-MILE AIR TRIP

W ALDO D. WATERMAN has returned from a 6610-mile air trip over 10 different air lines. His trip is said to have set a record for miles of American scheduled airways traveled.



# APPROVED



### Airline Executives, Engineers and Pilots Accept This Monoplane As An Ideal, Highly Efficient Commercial Airplane

SENSATIONAL as its performance may be—with quick take-off, high cruising speed, and slow landing speed, RYAN M-1 offers more:—

Its rugged simplicity, long life, low upkeep, great fuel economy per pound mile and long cruising range present a combination of qualities most to be desired in present day airplanes.

The thick elevated mono wing is not easily damaged. The wide, split type landing gear negotiates high weeds and brush easily. The plane itself will withstand the most severe tests of service.

"You are offered in the RYAN M-1 America's most modern, thoroughly practical commercial airplane."

### RYAN AIRLINES

SAN DIEGO

Ryan M-I prices represent incomparable values on the airplane market.

### NEWS OF THE AIR SERVICES



The PN-10 plane which made the 2170-mile flight from Hampton Roads to Panama.

#### NAVY PN-10 PLANE MAKES PANAMA FLIGHT

THE two PN-10 seaplanes which attempted a non-stop 2,170-mile flight from Hampton Roads to Panama left Hampton Roads late in the afternoon of November 23rd, the ship commanded by Lt. C. Je Connell taking off at 4:18 p. m. and the secand ship, commanded by Lt. Commander H. T. Bartlett getting off at 4:36 p. m. The flight was not to determine the speed of the ships but to learn if this type of ship is suitable for air voyages of long duration.

Commander Bartlett's Ship No. 2, with Lts. H C. Rodd, C. H. Schildhauer and Chief Machinists Mate C. J. Sutter, was forced down at Nueva Gerona, Isle of Pines, at 6:30 in the morning of November 24th, due to an exhausted oil supply. They had flown 1,186 miles. The companion craft No. 1 commanded by Lt. Byron J. Connell was forced down about 250 miles south of the Isle of Pines, due to broken connecting rod which failed on account of a defect in the lubricating system. Their flight had covered 1,448 miles.

At 6:50 a. m. November 26th, Commander Bartlett's PN-10 No. 2 took off again from Francis, Siguanea Bay, Isle of Pines, and headed for Coco Solo Naval Air Station, Panama. He completed his journey without further mishap, landing at 5:28 in the afternoon. His average speed was 75 miles an hour. It was the quickest trip ever made from Virginia to the Canal Zone.

The PN-10 No. 1 was ordered to ahandon its flight. This plane was picked up by the S. S. Vega which proceeded to Coco Solo where it will also take aboard Plane No. 2, proceeding to San Diego where the two planes are to establish a long-range scouting

The ships are constructed of duralumin, their hulls riveted and sealed with reinforced plates. Except for the fact that the two 600 horsepower Packard motors have a greater compression than those in the PN-9. the flying boat used by the late Commander Rodgers on the flight to Hawaii, the two types of craft are essentially the same. Be-

tween them, the planes carried 1500 gallons oi easoline

The weight of the PN-10 loaded is 21,000 pounds; wing span, 72 feet 10 inches; overall length, 49 feet 2 inches; overall height, 1612 feet; cruising speed, seventy-five knots, or between eighty-four and eighty-miles an hour. Each plane carries three different types of radio, three types of compass and two drift indicators. The three-bladed Standard Steel propellers are adjustable at any angle of pitch.

#### AVIATOR'S POST NO. 743 ARMISTICE REUNION

ON Armistice night, Nevember 11th, at the Hotel Astor, New York City, one of the most successful aviators' reunions was held by the American Legion Aviators' Post No. 743. It was the second annual armistice night dinner held by this organization of

war-time flyers. Many prominent airmen were present, many of them well-known aces. The ceremonies were very ably conducted by the new Commander of the post. John Dwight Sullivan, who introduced the speakers of the evening-Lieut. Leigh Wade, 'round-the-world flyer, who attended as the guest of Aero Digest; Elliott G. Springs, distinguished literary airman and world war ace: Igor Sikorsky, pilot-engineer of international fame. Wade told some amusing incidents occurring on the 'round-the-world flight. Springs drew many laughs at the stories of the boys in his squadron in France. Sikorsky spoke briefly of his plans for the future and was given hearty cheers of encouragement. Gene Tunney, heavy-weight champion, and his manager, Dudley Field Malone, spoke a few words of greeting,

Commander Sullivan made formal annonncement of their success toward interesting the city authorities in establishing an airport in New York City. The Aviators' Post suggested the creation of a municipal aviation field at Throggs Neck, Bronx, on the East River. The proposed site, 2,400 feet by 2.000 feet, can be purchased for about \$160,-000 and put into condition for \$200,000.

The new officers of Aviators' Post No. 743 are: John Dwight Sullivan, Commander; Vice-Commanders: Harold E. Hartney, 1st, John A. Bockhorst, 2nd, and Gordon Reel, 3rd; Financial Officer, H. L. Roberts; Ad jutant, John F. Eggleston; Executive Committee: Rex Gilmartin, Charles S. Matthews, Edward V. Rickenbacker, Claude R. Collins, I. K. Noble, Hon, F. H. LaGuardia, C. S. (Casey) Jones and Duncan Mackenzie; Chaplain, Father John J. Sullivan; Delegates: C. S. Matthews and Harry Barteau.

December, 1926.

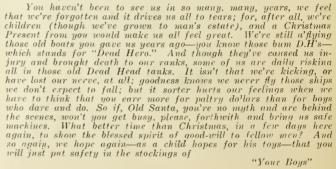


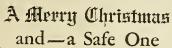
#### AN OPEN LETTER TO-

Santa Claus, c/o General Headquarters, Washington, D. C.

Dear Santa,

"Your Boys" Victor A. Smith





Uncle Sam gives his Army & Navy Aviators MEYROWITZ

LUXOR GOGGLES

for their Safety

Give your aviator friend: Luxor Goggles for a Merry Christmas and — a Safe One

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# Now—lighter tie rods for internal bracing



By an exclusive Macwhyte process of cold-rolling and drawing we have developed a round tie rod with standard thread diameters and reduced diameters in the center section—a tie rod lighter in weight with unusual strength. Permits absolute adjustment. Made in accordance with Government specifications. Same strengths as Streamline Tie Rods. Ask for full details. Macwhyte Company, 2907 Fourteenth Ave., Kenosha, Wisconsin.

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TIE RODS

Many types of American aircraft prominent in the past year for their records of high performance and reliability are equipped with



#### BOYCE MOTO METER

Among them are the following:

Fokker Stinson
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### THE MOTO METER CO., Inc.

LONG ISLAND CITY, N. Y.

#### ARMY AND NAVY AIR SERVICE ORDERS

#### ARMY AIR CORPS ORDERS

THE following Army Air Corps orders have been issued as of the dates indicated in brackets: Abbey, 1st l.t. Evens, upon completion of present tour of foreign service to Chanute Field, Ill.

(Nov. 19)

kire, Flying Cadet Darr Hayes, from Luke Field, Hawaii, to Hawaiian Department. (Nov. 10) Ilison, Flying Cadet Dixon McCarty, from Mit-chel Field, N. Y., to Langley Field, Va.

chel Field, N. Y., to Langley Field, Va.

Andrew, James William, to Air Corps Primary
Flying School, Brooks Field, Tex. (Nov. 10)
Bailey, 1st Lt. Joseph P., from Kelly Field, Tex.
to Canal Zone.
Bangs. 1st Lt. Henry Leighton, from Detroit.
Mich., to procurement planning representative,
Detroit for training. (Oct. 27)
Bassett, Flying Cadet Charles Arthur, from Selfridge Field, Mich., to Brooks Field, Tex.

Baucom, Capt. Byrne V., from assignment and duty in the office of the Chief of the Air Corps to commanding officer Bolling Field, D. C., for duty. to commanding officer Bolling Field, D. C., for duty.

(Oct. 29)

Baxter, Thurston H., to Brooks Field, Tex.

Ovv. 10)
Boyd, Flying Cadet Kenneth Watson, from Kelly
Field, Tex., to Fort Crockett, Tex. (Nov. 10)
Bridget, Flying Cadet Bernard Alexander, from
Langley Field, Va., to Langley Field, Va.

Carlson, Oscar Frederick, to Brooks Field, Carroll, 1st Lt. James B., leave of absence 7 days

Cheatle, Francis Edgard, to Wright Field, Or (Nov.

Collins, Flying Cadet James Henry, from Chante Field, Ill., to Brooks Field, Tex. (Nov. 10)
Connolly, 2d Lt. Frederick William, honorably
discharged from the U. S. Army upon completion of treatment at Walter Reed Hospital,
Washington, D. C. (Nov. 12)
Cote, Flying Cadet Narcisse Lionel, from Maxwell Field, Ala., to Maxwell Field, Ala. (Nov. 10)
Davies, Clinton William, to Brooks Field, Tex.
(Nov. 10)

Davies, Clinton William, Company, Company, Ward Jackson, to Brooks Field, Tex. (Nov. 10)

Nov. Jawson, Flying Cadet Wallace Stribling, f Langley Field, Va., to Langley Field, Va.

(Nov. 10) Deerwester, Flying Cadet Charles Herman, fron Selfridge Field, Mich., to Selfridge Field, Mich

Selfridge Field, Mich., to Selfridge Field, Mich.

Denson, Corp. Marcus J., travel from Crockett,
Tex., to Kelly Field, Tex., thence to Mont.
Tex., by air; thence to Halletsville, Tex., by
motor; thence to Eagle Lake, Tex., by rail;
thence to Fort Crockett, Tex., by air, confirmed
as necessary for public service, due to his having
been delayed by wrecked plane. (Nov. 5)
Devasher, 2d Lt. Glenn L., leave of absence 20
days, amended order. (Nov. 9)
Doolin, 1st Lt. Bernard Michael, from San Francisco, Calif., to procurement planning office, San
Francisco. (Oct. 30)

cisco, Calif., to procurement planning once, rearrisco.

Downey, 1st Lt. Hugh C., leave of absence 19 days.

Draper, 2d Lt. Charles Stark, relieved from duty at Brooks Field, Tex., and proceed to home at Palo Alto, Calif., where he will stand relieved.

Duffy, 2d Lt. Martin Williams, from Cedar Rapids, Iowa, to procurement planning representative, Chicago, Ill.

Dyer, Harvey Flynn, to Marshall Field, Fort Riley Kans Dyer, Harvey Flynn, to Marshall Field, Fort Riley, Kans. (Nov. 10) Eppright, George J., to Air Corps Primary Flying School, Brooks Field, Tex. (Nov. 10) Fechet, Brig. Gen. James E., assistant to the Chief of the Air Corps, leave of absence 15 days. (Nov. 12)

(Nov. 12)
Fisher, Dale D., travel by air from Langley Field,
Va., to Philadelphia, Pa., via Bolling Field, D.
C., confirmed.
(Nov. 20)
Galbraith, Sgt. Harold, from Kelly Field, Tex.,
to Selfridge Field, Mich., and return. (Oct. 29)
Gamble, Herhert Will, to Pope Field, Fort Bragg
N. C.

N. C. (Nov. 10) Gehlbach, Lee, to Selfridge Field, Mich. (Nov. 10) Gilkey, Signa Allen, to Chanute Field, Ill. (Nov. 10) Gilley, Richard Hays, to Brooks Field, Tex.

Gilley, Richard Hays, to Brooks Field, Tex.

(Nov. 10)
Gillmore, Brig. Gen. William E., Par. 22. Special Orders No. 241 directing him to proceed to McCook Field, Ohio, amended to direct him to proceed to Dayton, Ohio, and report for duty with material division. (Oct. 26). Leave of absence 2 days.

(Oct. 29)
Goddard, 1st Lt. George W., from McCook Field, Ohio, to Canal Zone.

(Nov. 19)
Graham, Capt. Douglas Adair, Specialist Reserve, from Dayton, Ohio, to McCook Field, Ohio, for training.

from Dayton, Ohio, to McCook Field, Ohio, for training.

Green, Staff Sgt. Clarence D., travel from Crockett, Tex., to Kelly Field, Tex., thence to Mont, Iex., by air; thence to Halletsville, Tex., by motor; thence to Eagle Lake, Tex., by rail;

thence to Fort Crockett, Tex., by air, to salvage wrecked plane, confirmed. (Nov. 5)
Griffin, Capt. Leo James, from Atlantic, Mass., to Langley Field, Va., for training. (Nov. 4)
Guillett, Flying Cadet John Felix, from Kelly Field, Tex., to Fort Crockett, Tex. (Nov. 10)
Hanlon, 1st Lt. William J., leave of absence, 1 month, 10 days.
Harbeck, 1st Lt. Edward V., detailed to Galveston, Dec. 9, thence to Panama. (Nov. 1)
Harrison, Pyt. Donald G., 61st Service Squadron, from Mitchel Field, N. Y., to Hartford, Conn., and return to Mitchel Field for the purpose of salvaging wrecked airplane. (Nov. 0)
Harvey, Tech. Sgt. Alva Lee, from Brooks Field, Tex., to Langley Field, Va.
Hawthorne, 2d Lt. William B., from duty at Brooks Field, Tex., to duty with Second Division.

sion. (Nov. 29)
Henry, George Edley, to Crissy Field, Presidio
of San Francisco, Calif. (Nov. 10)
Herold, Capt. Armin F., from Organized Reserves of the Ninth Corps Area, to Canal
Zone. (Nov. 19)
Holmes, Ralph Emerson, to Brooks Field, Tex.
(Nov. 10)

Holmes, Thomas Jackson, to Mitchel Field,

Hudson, Staff Sgt. Linwood Pendleton, fr Brooks Field, Tex., to Brooks Field, Tex. (Nov.

Hughes, Pvt. 1st Class., Henry Lee, from dio of San Francisco, Calif., to Brooks

Hyndshaw, 1st Lt. Silas S., upon completion of present tour of foreign service to Chanute Field, Ill. III.
Irvine, Clarence Shortridge, to Selfridge Field,
Mich. (Nov. 10)

Mich.

Mi

earney, Maj. Raymond Warren, from Alameda, Calif., to San Francisco, Calif., for training. (Oct. 30)

Kieburtz, 2d Lt. Rowland, from Langley Field, Va., to Brooks Field, San Antonio, Tex. (Nov. 6) Klein, Frank Dunne, to Kelly Field, Tex.

Knight, 2d Lt. Elmer Florence, from Brooks Field, Tex., to New York City. (Oct. 26) Kyle, Reuben, Jr., to Brooks Field, Tex. (Nov. 10) Larratt, 2d Lt. Arthur Edward, relieved from duty at Brooks Field, Tex., and proceed to home at Billerica, Mass., where he will stand re-

duty at Brooks Field, at Billerica, Mass., where he will stand at Billerica, Mass., where he will stand (Nov. 22 lieved, (Nov. 10 Kov. 10 Kov.

Lichtenberger, Herbert Charles to Brooks Field, Tex.

(Nov. 10)
Lindsay, Gregg Miller, to Brooks Field, Tex.

(Nov. 10)
Lindstrom, 2d Lt. Gustaf Thorsten, Buffalo, N. Y., to procurement planning representative, Bnffalo for training.

Lucas, Mason Harley, to Brooks Field, Tex.

(Nov. 10)
Malone, Kerwin, travel by air from Langley Field, Va., to Philadelphia, Pa., via Bolling Field, D. C., confirmed.

Mathis, Capt. Paul J., leave of absence extended 1 month, 10 days.

Mayhue, 1st Lt. Don. W., from Chanute Field, Ill., to Canal Zone.

Meece, 2d Lt. Leon Everett, reserve, so much of Par. 20, Special Orders No. 211, as relates to him, is revoked.

Melanson, 1st Lt. Arthur J., to duty in office of Chief of Air Corps, Washington, D. C., upon completion of present tour of foreign service.

completion of present tour of foreign service.

Metzger, 1st Lt. Sanford Samuel, from San Jose, Calif., to procurement planning representative, San Francisco, Calif. (Nov. 15)
Minter, 1st Lt. Hugh C., assigned to Brooks Field, Tex. (Nov. 18)
Murray, George Leroy, to Bolling Field, D. C. (Nov. 10)
Myers, Corpl. Harry, 61st Service Squadron, from Mitchel Field, N. Y., to Hartford, Comm., and return to Mitchel Field for the purpose of salvaging wrecked airplane. (Nov. 10)
O'Connor, Staff Sgt. Charles Winslow, from

Nelson, Paul Burmann,
O'Connor, Staff Sgt. Charles Winslow, from
Mitchel Field, N. Y., to Wright Field, Ohio.
(Nov. 10)

Ogden, Flying Cadet Harvey Robinson, from Kelly Field, Tex., to Fort Sam Houston, Tex.

Oldys, Capt. Robert, appointed acting liaison of ficer, Army War College, during temporary absence Maj. Herbert A. Dargue.

O'Neal, Staff Sgt. Joel G., from Wright Field, O., to Middletown, Pa.

Ott, 1st Lt. Roderick N., upon completion of present tour of foreign service to Brooks Field, Tex.

Padgett, 2d I.t. Benjamin Robert, Jr., Reserve, from duty at Brooks Field, Tex., in the arrive home March 10, 1927, revoked, o to his home in Atlanta, Ga., where he will in time to

relieved.

Parker, Maj. Victor Clark, Reserve, from Chicago, Ill., to report to Assistant Secretary of War for training in connection with procurement activities.

War for training in connection with procures ment activities.

Patrick, Maj. Gen. Mason M., Chief of Air Corps, leave of absence 4 days.

Peck, Staff Sgt. Royal Z., from Fort Crockett, Tex., to Fairfield Air Intermediate Depot, Fairfield, Ohio, and return to Fort Crockett, Tex., to Fairfield Air Intermediate Depot, Fairfield, Ohio, and return to Fort Crockett for purpose of acting as mechanic on Donglas transport.

(Nov. 13)

Pettis, 1st 1.t. Edward Valentine, from Ukiah, Calif., to procurement planning representative, San Francisco, Calif.

Pierce, Col. Overton Curtis, Reserve, from Washington, D. C., to Mitchel Field, N. Y., and thence to Langley Field, Va.

(Nov. 18)

Post, 1st 1.t. Leo F., assigned to Brooks Field, Tex., on completion of present tour of foreign service.

Puryear, 1st 1.t. Alfred I., relieved from treatment Walter Reed General Hospital, Washington, D. C., and will rejoin proper station at Langley Field, Va.

(Nov. 18)

Ominn, Staff Sgt. Ralph E., travel by air from Langley Field, Va.

On Langley Field, Va.

Field, Tex.
Ramsey, 1st Lt. Howard K., leave of ahsence 2 months.

Randolph, Capt. William M., upon completion of present tour of foreign service to Kelly Field, Tex.

Reeves, Flying Cadet Richard Dodge, from Mitchel Field, N. Y., to Brooks Field, Tex.

(Nov. 19)

Reeves, Chapute Field, Chapute Field, Tex.

chel Field, N. 1-, W. 1. (Nov. 10)
Rich, 1st Lt. Arnold H., from Chanute Field,
Ill., to Brooks Field, Tex. (Nov. 18)
Rogers, Flying Cadet Elmer Joseph, Jr., from
Langley Field, Va., to Langley Field, Va.
(Nov. 10)

Langley Field, Va., to Langley Field, Va.

(Nov. 10)
Ross, Charles Arthur, to Air Corps Primary Flying School, Brooks Field, Tex. (Nov. 10)
Ross, Pvt. Josiah, from Mitchel Field, N. Y.,
to Air Corps Primary Flying School, Brooks
Field, Tex.

Schwartz, 2d Lt. Philip, removed from list excepting him from duty.

Sparhawk, Flying Cadet George Hall, from Kelly
Field, Tex., to Brooks Field, Tex. (Nov. 10)
Sprague, Flying Cadet John Titcomb, from Langley Field, Va., to Langley Field, Va.

Stowell, George F., travel hy air from Langley
Field, Va., to Philadelphia, Pa., via Bolling
Field, D. C., confirmed
Stroh, Claire, to Maxwell Field, Ala. (Nov. 10)
Stuart, Capt. Geary John, from Charleston, Ore.,
to San Francisco, Calif. (Oct. 27)
Tarro, John Albert, to Brooks Field, Tex.

Tarro, John Alhert, to Brooks Field, Taylor, 2d Lt. John O., from duty at Brog Field, Tex., to duty with Second Division

Taylor, Flying Cadet Yantis Halbert, from For Crockett, Tex., to Kelly Field, Tex. (Nov. Tillery, Manning Eugene, to Brooks Field, Tex

Tonkin, 1st Lt. Earle H., leave of absence

Upson, 1st Lt. John E., from Bolling Field, D. to Chief of Air Corps, Washington, D. C., duty. (Nov.

Walbridge, Flying Cadet Donald Cornelius, from Langtey Field, Va., to Kelly Field, Tex., (Nov. 10)
Watts, 2d Lt. Newell E., from duty at Brooks Field, Tex., to duty with 2nd Division. (Nov. 20)
Wheeler, Clarence Daniel, to Brooks Field, Tex.
(Nov. 10)

Williams, Staff Sgt. Charles V., travel by from Langley Field, Va., to Philadelphia a return via Lakehurst, confirmed as necessary

Wiselogel, Charles Owen, to Brooks Field.

Yale, 2d Lt. Wesey W., from foreign service to San Antonio, Tex., transfer from Cavalry to Air Corps. Harry H., from Langey Fied, Va., to Omaha, Nebr., for training, Cott. 29, Zane, 1st Lt. Robert T., leave of absence 4 months. (Nov. 5) Zimmer, 2d Lt. Elmer Edward, Reserve, to procurement planning representative, Buffalo, N. Y. (Oct. 29)

#### MARINE CORPS AIR ORDERS

MARINE CURPS AIR ORDERS
THE following Marine Corps air orders have been issued as of the dates indicated in brackets; Kline, 2d Lt. L. R., detached Naval Air Station, Pensacola, Fla., to M. C. B., N. O. P., San Diego, Calif.

Matteson, Capt C. P., detached Naval Air Station, N. O. R., San Diego, Calif., to M. D., U.S.S. Scattle.

(Nov. 13) (Continued on page 454)



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#### "WASP" TEST SUCCESS

EQUIPPED with a new Pratt-Whitney 400-horsepower radial air-cooled engine, a Curtiss "Hawk," one of the Navy's latest fighting planes, has just completed a satisfactory test under supervision of the Bureau of Aeronautics

The plane was flown by Lieut, Ralph A Ofstie, U.S. N., a test pilot in the bureau, from Washington to San Diego, thoroughly inspected and tested by the operating per sonnel in the fighting plane squadron of the Battle Fleet, and has been flown back to Washington by Lieut, Ofstie, the entire test covering a month's time.

The trip west, commenced on October 6, was made over the southern route, going via Dayton, Belleville, Muskogee and across Texas, along the border to San Diego. On the completion of work at San Diego, the plane was flown to Seattle up the inland route, via Bakersfield and Medford.

The return trip from Seattle was made via Boise and Salt Lake, Dayton and back to Washington. The total flying time for the round trip was about 65 hours, covering a total of approximately 7,000 miles.

Although the trip was made rather late in the year, unfavorable weather conditions were encountered only in the northwest where heavy ground fog resulted in considerable lost time and roundabout courses. The plane proved to be an excellent crosscountry ship, no difficulty being experienced with the high fields encountered in the mountain regions. No plane maintenance was required at any time during the trip

The new Pratt-Whitney engine proved to be satisfactory for this service from the time of leaving Washington until return. The only work done was the removal and inspection of spark plugs at San Diego Nothing was required beyond filling the fuel tanks and cranking up the engine.

The combination of the Curtiss "Hawk" with the Pratt-Whitney "Wasp" engine was very well liked by the operating personnel of the Battle Fleet.

#### PENSACOLA NEWS

T RAINING has been resumed at the Pensacola Naval Air Station which was interrupted by the hurricane of September 20. The activities have been reorganized to establish two departments covering all training of students. The flight school, in charge of Lient, H. S. Sease, will have primary flight training and the technical school, in charge of Lieut, D. M. Carpenter, will have all other training activities The technical school is organized in eight sections covering the activities of the former ground school, gunnery school, photographic school and advanced courses.

Excellent progress is being made at the station in repairing the damage suffered from the recent hurricane.

#### ARMY FLYERS PLANT DEVASTATED LAND

THE Army Air Corps stationed at Hawaii cooperated with the Hawaiian Territorial Board of Agriculture and Forestry recently in sowing tree seeds by airplane on forest reserve lands which had been devastated by fire.

Two planes were assigned to the work in an area of about four square miles in the Panewa Forest Reserve. Lieutenant R. S Worthington, flight commander, made three trips over the burned area, and distributed a total of 24 bags of seed. It was estimated that in about an hour and a half flying time the two men in planes accomplished as much as two men working on the ground could have done in 10 years.

#### IAPAN DECORATES THE WORLD FLYERS

THE Japanese Government recently conferred decorations on the Round-the-World flyers. Lieutenant Lowell H. Smith, Lieutenant Leslie P. Arnold, and Lieutenant Henry H. Ogden were awarded the Order of the Sacred Treasure, while Lieutenant Leigh Wade, Lieutenant Erik H. Nelson, and Lieutenant John Harding, Jr., received the Order of the Rising Sun.

#### NAVY AIR SERVICE ORDERS

(Continued from page 452) (Continued From Fage 402)

The following Navy Air Service orders have been issued as of dates indicated in brackets: Adams, Lt. Comdr. John C., detached U.S.S. Langley, to Naval Air Station, San Diego, Calif.

Adell, Ensign Cecil O., detached U.S.S. Arkansas, ley, to Naval Air Station, San Diego, Calif.

Adell, Ensign Cecil O., detached U.S.S., Arkansas, to temporary duty Naval Air Station, Pensacola, Fla. (Nov. 10)
Andrews, Ensign James R., detached Naval Air Station, Pensacola, Fla., to U.S.S. Tennessee.

Baker, Lt. Felix L., detached VF Squadron I, Aircraft Squadron, Battle Fleet, to Naval Air Station, Pensacola, Fla.

Bauch, Lt. Charles E., detached Naval Air Station, Lakehurst, N. J., to U.S.S. Los Angeles. The Company of the Compa

Bradley, Comdr. Willis W., Jr., detached R. Bks., Hampton Roads, Va., to Bureau of Naviga-

Bradley, Comdr. Willis W., Jr., detached R. Bks., Hampton Roads, Va., to Bureau of Navigation.

Burkett, Lt. Eugene F., detached Aircraft Squadron Battle Fleet, to Naval Air Station, Pensacola, Fla.

Carr, L. (J.g.) Roy E., detached U.S.S. Golf, to Naval Air Station, Pensacola, Fla.

Carr, L. (J.g.) Beverly E., detached U.S.S. Lanson, to temporary duty Naval Air Station, Pensacola, Fla.

Chapline, Lt. Condr. Vance D., detached U.S.S. Lanson, to temporary duty Naval Air Station, Pensacola, Fla.

Chen, Lt. (J.g.) Angus M., detached U.S.S. Trenton, to Bureau of Navigation. (Nov. 10)

Chapline, Lt. Condr. Vance D., detached U.S.S. Childs, to temporary duty Naval Air Station, Pensacola, Fla.

Crawford, Lt. (J.g.) Angus M., detached U.S.S. Childs, to temporary duty Naval Air Station, Pensacola, Fla. (Nov. 10)

Crawford, Lt. (J.g.) Charles W., detached U.S.S. Squadron I, Aircraft Squadrons, Scouting Fleet, to Naval Air Station, Pensacola, Fla. (Nov. 15)

Cummingham, Lt. Robert P., detached Naval Air Station, Pensacola, Fla., to Navy Yard, Philadelphia, Pa.

Squadron 2, Aircraft Squadrons, Battle Fleet, to U.S.S. Langle, Company Control of the Condr. Con

to temporary duty Naval Air Station, Pensacola, Fla.

Hawkins, Lt. Clarence A., detached Naval Torpedo Station, Newport, R. I., to Obs. Plane Squadron 6, Aircraft Squadrons, Scouting Fleet. (Nov. 12)

Henderson, Lt. George R., detached Naval Air Station, Anacostia, D. C., to duty VO Squadron 3, Aircraft Squadrons, Scouting Fleet.

(Nov. 13)

Higgins, Lt. Merritt P., detached Naval Air Station, Pensacola, Fla., to U.S.S. New York.

Johnston, Lt. (j.g.) Bates H., detached VS. Squadron 1, Aircraft Squadrons, Scouting Fleet, to Naval Air Station, Pensacola, Fla. (Nov. 16)

Kendrick, Lt. Harold H., detached U.S.S. Mississiphi, to Naval Air Station, Pensacola, Fla. (Nov. 16)

King, Ensign Sidney, detached Naval Air Station, Pensacola, Fla., to U.S.S. Wright. (Nov. 10)

Lindsay, Lt. (j.g.) Stewart, detached Air Station, Pensacola, Fla., to Office Naval Commun. Navy Dept.

Lockhart, Ensign Robert G., detached Naval Air Station, Pensacola, Fla., to Office Naval Commun. Navy Dept.

Lockhart, Ensign Robert G., detached Naval Air Station, Pensacola, Fla., to U.S.S. Charles Ausburn.

McWhorter, Comdr. Charles S., detached command U.S.S. McDermut, to temporary duty Naval Air Station, Pensacola, Fla., to Nov. 17)

Mead, Lt. (j.g.) Alfred R., detached Torpedo and Bomb Plane Squadrons 1, Aircraft Squadrons, Scouting Fleet, to Aircraft Squadrons, Scouting Fleet, to Aircraft Squadrons, Scouting Fleet, to Aircraft Squadrons, Scouting Fleet, U.S.S. Sapelo, Morse, Lt. (j.g.) Hower of the Misself Pensacola, Fla., to U.S.S. Saratoga.

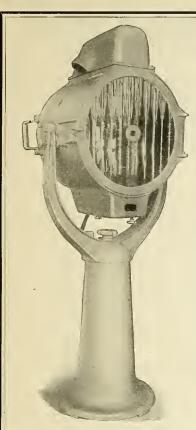
Mischer, Lt. Comdr. Marc A., detached V.S. Doven, L. (j.g.) Robert O., detached Air Station, Pensacola, Fla., to U.S.S. Saratoga.

Mischer, Lt. (j.g.) Edward, Squadrons Scouting Fleet, Commonatory of the Misself Pensacola, Fla. (Nov. 16)

Mischer, Lt. (j.g.) Edward, Squadrons, Scouting Fleet, U.S. Doven, L. (j.g.) Robert W., detached U.S.S. Words, to Naval Air Station, Pensacola, Fla. (Nov. 16)

Mischer, Lt. (j.g.) Don L., detached Naval Air Station, Pensacola, Fla. (Nov. 16)

Mischer, Lt. (j.g.) Appollo



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### THE AERONAUTICAL INDUSTRY



-- Hauser Bob.

Laying the cornerstone of the administration building, Buffalo Municipal Airport.

Left to right: Major John M. Satterfield, sponsor of the aurport, Commissioner Leve, of the
Department of Public Works: William P. McCracken, Jr., 48st Sec'y of the Dept. of Commerce
in charge of Civil Aviation: Major General Mason M. Patrick, Chief of the Army Air Corps; Mayor
Schwab of Buffalo: Commissioner Moore, head of Dept. of Parks and Buildings; and H. Ralph
Badger, vice-chairman, Buffalo Air Board.

#### BUFFALO AIRPORT

BUFFALO municipal airport, an admirable one in all respects, is situated 8 miles from the center of the city's business district. It covers 518 acres of high flat ground, adequately drained. There are two main runways, east and west and northeast and southeast, each 2500 by 100 feet, drained and paved with rolled cinders.

Three hangars have been constructed on the field by the Wm. E. Arthur Co., two of which are 65 by 80 feet and the third, 80 by 100 feet, of steel, brick and glass construction giving the best possible daylight conditions inside. The concrete floors slope toward a submerged drain extending along the front of each hangar. A completely equipped garage and shop are also completed and fire apparatus has been installed. A special gasoline supply truck is used for refueling planes on the field. There are also first aid rooms, and the administration building which commands a full view of the field is under construction.

The buildings are white on all outside surfaces, thus giving pilots an exceptionally fine and distinctive steering mark. Two municipally owned wells on the property are expected to produce enough gas to heat all the buildings to comfortable temperature at all times. Central telephone and fire alarm systems connect all parts of the field through the administration building.

Machine shop facilities and a restaurant are provided. Provision is made for the construction of houses for field workers. A revolving seven million candle power beacon is being installed on top of the administration building. There are also spot lights for projection onto the runways.

Thus far the field and equipment have cost the City of Buffalo approximately \$700,000.

Major John M. Satterfield, the designer of the field, was in charge of the work of providing adequate air terminal facilities for the U. S. Army in France. In that capacity he had opportunity to observe their construction and actual operation under all conditions. The construction was in charge of Lieut, E. M. Ronne, who served as a pilot in the U.S. Air Service during the war and has been actively engaged in flying and field operation since that time. Work was started on the field on May 3, 1926, and it has been in constant use ever since. The Buffalo City Council selected Lieut. E. M. Moore, former Air Service pilot and manager of Curtiss Field as manager of the Airport

### BIDS ASKED FOR GOV'T

THE Post Office Department has called for hids on the transcontinental (1,896 miles) and overnight New York-Chicago (731 miles) air mail routes, returnable at noon January 15, 1927.

The contracts for the air mail lines will be let in two sections. The first will include the New York to Chicago leg of the transcontinental route and the overnight route between New York and Chicago, both of which run via Bellefonte, Pa., and Cleveland and Bryan, Ohio. The second section will be the Chicago to San Francisco leg, via Iowa City and Des Moires, Iowa, Omaha and North Platte, Nebr., Cheyenne and Rock Springs, Wyo., Salt Lake City, Utah, Elko and Reno, Nev., and Sacramento, Calif.

The schedule will require an average flying speed of at least 90 miles an hour, with allowance for slower time for weather conditions.

Announcement was also made that the proposed new uniform rate of 10 cents a half ounce for air mail to all points in the United States soon will be put into effect.

#### A FLYING INSPECTION

C. CHESNEY, newly elected president of the A. I. E. E., finds aviation a valuable aid in carrying on his duties as manager of the Pittsfield plant of the General Electric Company and member of that company's manufacturing committee.

A recent trip of inspection to the Schenectady plant was necessary and Mr. Chesney engaged the services of Victor A. Rickard of the Inter-City Airway Service in Schenectady for the purpose of vicwing the plant from the air, as shown in the accompanying illustration.



An air view of The General Electric Company's plant at Schenectady, New York.

# The Most Successful Aero Engine of 1926 is the

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T has proved its superiority for RELIABILITY, EFFICIENCY and SPEED—not in an isolated case, but consistently with standard engines taken from stock.

Four Royal Air Force machines fitted with Napier engines successfully flew from Cairo to Cape Town and back to England, covering 56,000 engine flying miles.

The twin-engined Royal Air Force Supermarine flying boats, fitted with Napier engines have flown from Plymouth to Alexandria and back, covering 27,000 engine flying miles.

A flight of Royal Air Force Vickers-Victoria machines fitted with Napier engines carried out a flight from Cairo to Aden and back, covering 18,000 engine flying miles.

Major Franco, on a Dornier Wal flying boat fitted with two Napier engines, flew from Spain to Buenos Aires, covering 12,518 engine flying miles.

In the German competition to discover the best commercial seaplane the first prize was won by the only Napier engined machine entered—the Heinkel-Napier.

When considering the use of aero engines you cannot do better than follow the lead of the British Air Ministry and select the

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Rodgers Field, the Pittsburgh, Pennsylvania, municipal airport. © U.S. Army Air Corps.

#### KANSAS CITY NEWS

By TERENCE VINCENT

A PERMANENT airport for Kansas City will result soon, when ambitions of the Chamber of Commerce and the Kansas City Aeronautical Association come true. A meeting of the Board of Governors of the K.C.A.A. was addressed recently by Lou Holland, president of the Chamber of Commerce, with the result that plans are being laid for lighting and leveling Richards Field, and possibly erecting 200 individual hangars for personal use of each pilot with his plane and mechanic.

"Eventually we may get a municipal airdrome a mile square, but at present we must get the best available field and get it into first class condition with lights," Mr. Holland said.

Among those attending the meeting, at the Midday Clubrooms were H. J. Vrooman, Dr. G. E. Halley, George L. Bennett, Harry Becker, J. N. Becker, C. T. O'Maley, Wilton M. Briney, Frank Stoll, and L. C. Miller of Des Moines.

Pilot Miller came to Kansas City in an Eaglerock biplane recently in 5 minutes less than two hours, with a tail wind.

#### MONTICELLO AIRPORT

ONTICELLO Airport has been designated by the Adjutant General of Arkansas as an auxiliary landing field for the State's National Guard Observation Squadron, and is located on State land, on the premises of the 4th District Agricultural & Mechanical College of Arkansas, two and a half miles south, 30 degrees west, of Monticello. The field is in the form of a rectangle 1,800 feet long (east and west) by 1,000 feet wide (north and south). It is equipped with a small fireproof hangar adequate for housing and locking two ships, has a telephone, and lockers for the convenience of pilots in storing over night their parachutes and other personal belongings. The field is also equipped with a gasoline and oil filling station furnished with aviation gasoline and suitable oils. The field has been provided with a fourteen-foot windsock, mounted on steel roller bearings, and the usual 100-foot wide circle with a 4-foot bank marks the center of the best portion

of the field in which to land. The field has a clear approach from the north, east and west, with the exception of low telephone lines along the road on the north and west sides. It is well drained and sodded in grass, hence available for landing in wet weather.

This landing field at Monticello in connection with the splendid "Million Dollar Airport" at Little Rock from which the last National Balloon Races started, and the rew airport opened at Pine Bluff, Arkansas, and the Government Dusting Experimental Station at Tallulah, La., offers a new and very convenient airway from St. Louis through Arkansas into Louisiana and Texas.

#### DAYTON AIRPORT

DAYTON celebrated the opening of its municipal airport with a flying circus on September 26th. Robert E. Condon, president of the United States Junior Chamber of Commerce gave a short address on the grounds. This is the first J-C (Junior Chamber) marked airport in America, but it is the plan of this body to have an upto-date J-C marked landing field in every city where a Junior Chamber is organized. It is expected that 22 will be completed in the next eight months. Farnum Parker, the youngest licensed aviator in the United States, Lawrence Moore, parachute jumper, and Roscoe Turner featured in the performance which was of strictly a civilian aeronautical nature.

#### RUSHVILLE AIRPORT

R USHVILLE, Illinois, has established a permanent landing field for use of all visiting pilots. The field is located midway of the golf course in Scripps Park at the southwest corner of the city. This is also the intersection of the State paved road between Peoria and Quincy, and Rock Island and St. Louis. The field is marked with regulation white circle and T, and a wind cone has been installed. Flood lights for night landings will be provided upon advance notice. All communications in regard to the field should be directed to John S. Little, president, Bank of Rushville or Lieutenant Walter S. Houston, A.C.O.R.S.

#### PITTSBURGH AERO CLUB HONORS CAL, RODGERS

By RAY A. TUCKER

THE Aero Club of Pittsburgh on November 5th unveiled and dedicated before a large audience in the Carnegie Museum, a bronze plaque in memory of Calbraith Perry Rodgers, who, in 1911, made the First Transcontinental Airplane Flight. This date marked the fifteenth anniversary of the completion of the historic air trip.

With Raymond M. Marlier, president of the Aero Club, presiding, the program was carried out in the room in the Carnegie Museum where his ship has a permanent resting place. The plaque has been placed on a column closely adjacent to the ship, and was unveiled by his mother, Mrs. Marie Chambers Rodgers. Howard B. Pearce, past president of the club for three years, gave the principal address on the program. The new Pittsburgh Municipal Airport was named "Rodgers Field" in his honor, at the suggestion of the Aero Club of Pittsburgh.

Rodgers was born in Pittsburgh, Pa., in 1878, the son of Capt. Calbraith Perry Rodgers of the U. S. Army Cavalry—and a member of the well known Naval family of that name. He was a double cousin of the late Commander John Rodgers of the Naval Air Service. Their mothers were sisters, and married brothers. From early boyhood, these cousins were closely attached to each other and learned to fly through the Wright Brothers in June, 1911, at Dayton, Ohio. In less than a month after learning to fly, Capt. Rodgers won the Duration Prize of \$10,000 at the Chicago Aviation Meet, remaining in the air 22 hours.

On his Atlantic to Pacific Flight he left Sheepshead Bay, Long Island, on September 17th, 1911, in a new E-X model Wright biplane, and landed safely at Long Beach, California, on November 5th, 1911. His actual flying time was three days, ten hours and four minutes, but his elapsed time was fortynine days, due to the necessity of making sixty-nine landings and replacing eighteen new wings.

#### INSURANCE FOR FLYERS

CHARLES E. T. STUART LINTON takes his place among the writers of the largest insurance policies with his achievement in insuring the life of Anthony H. G. Fokker for approximately \$2,000,000.

This is by far the largest insurance policy written on the life of any man whose business requires him to fly. The insurance was divided among American and British insurance companies.

The general idea until recently has been that it was almost impossible to obtain life insurance on anyone who made even a few aerial flights.

During the war Mr. Linton served as a captain in the British Army and also in the Military Intelligence department. Since the war he has achieved an excellent record in the insurance field.

He has devoted much of his time towards increasing the confidence of life insurance companies in aviation and has succeeded in getting extra premiums for flyers.

### A New Plan to make Air Mail Profitable



AKE a leaf from the telegraph companies' book. They give different classes of service at different rates. The writer sug-

gests that the Air Mail Service offer two classes—Common and Preferred Delivery, the Preferred at the present air mail rates, and the Common at much lower rates, say 40% of the corresponding Preferred rates.

Why are two classes of service desirable? Because this plan would solve the air mail contractor's greatest problemthat of getting enough mail to fill the planes. The average air mail plane carries less than fifty pounds of air mail. A plane can easily carry 1500 pounds. Moreover, one plane a day is not sufficient for quick service or low average costs; three or four planes a day are necessary. That means a carrying capacity of two or three tons a day. And fifty pounds of air mail, which is all that can usually be obtained at the high rates, is only one per cent (1%) of two or three tons a day!

At low rates plenty of air mail could be obtained to fill the planes to capacity. If there happened to be more air mail than the plane could carry, some of the Common air mail would have to wait until the departure of the next plane; the Preferred would get special attention and the most

rapid delivery possible.

The minimum rate for the Preferred to be PER OUNCE, if a special delivery system is provided for the Preferred; and for the Common, PER HALF OUNCE; thus where the Preferred rate was TEN CENTS PER OUNCE, the Common rate would be FOUR CENTS PER HALF Now note this: as first-class letters average forty to the pound, four cents per half ounce would mean \$1.60 per pound, WHICH IS EQUAL TO TEN CENTS PER OUNCE, and \$3,200.00 per ton. At \$1,600.00 a ton an air mail contract would become quite profitable, with plenty of mail to fill the planes. Air mail contractors should learn to think in terms of ton miles, instead of cents per ounce, if they wish to get out of the picayune class, and into big business.

It seems strange that the Fords, who have accomplished so much for low-cost transportation on the ground, have not been able to do anything to lower the pres-

ent excessive air mail rates, although they are greatly interested in air transport. They are extending their air lines radiating from Detroit, but those lines will not amount to much, from a business standpoint, under the present air mail rates. It would seem that Edsel Ford has here an opportunity to achieve in the air what his father has done on the ground-make a new method of transport popular and widely useful through a large volume of business and consequent low average costs. A line of flying fields costs just about as much whether one plane a day or

twenty are operated over it.

The Fords do not lack either capital or political influence. There would be no opposition from anyone if they were to request the inauguration of such a plan as this, which would make air mail contracts very profitable at lower rates to the public. and thereby insure rapid extension of air mail lines to all important cities. This would greatly strengthen our national defense in the air. Moreover such great strength and also mobility, arising from numerous well-equipped flying fields, which are as necessary and important to an air line as tracks are to a railroadsuch great strength and mobility would be obtained without arousing foreign nations, as a great military air force would. Furthermore, there would be no danger that our air strength might be greatly decreased through a wave of pacifist or disarmament sentiment, as when scrapped our \$40,000,000 battleships.

Finally, a miltary force is a constant burden on the taxpayer, whereas new air mail lines would stimulate and speed up business, could be made self-supporting, and keep our aviation industry busy.

Arthur Brisbane recently quoted Henry Ford, who hates war, as saying that war is coming—war against the United States. Such talk might do great harm in foreign countries if followed by extensive military air preparations on our part. The sensible thing to do is to develop our Air Mail Service as fully and as rapidly as possible.

Mr. Ford, why not an air mail line from Detroit to Atlanta, via Bryan (Toledo), Dayton, Cincinnati, Louisville, and Nashville, connecting at Atlanta with the Flor-

ida line?

HARRY KIRKWOOD

### HEINKEL PLANE WITH WHIRLWIND ENGINES

NE of the extremely important characteristics of the Heinkel twin-engine photographic plane, powered with two Wright Whirlwind engines, is its light loading in lbs. per sq. ft. of wing area and lbs. per h. p. This loading has evidently been kept very light so that without question the plane would be able to fly on either one of the two Whirlwinds—an important characteristic and worth the sacrifice of some useful load.

Although it is called a photographic plane it would make an ideal observation plane either for Naval or Army use. It carries a crew of three men, one of whom would be pilot, another observer or radio operator and the third gunner. For night observation work this type of plane would probably be better suited than any plane being built anywhere in the world.

There is another important possibility with such a plane and that is as a training bombing plane. A plane of this size would cost a fraction of the cost of a full size bomber and the operating expense would be correspondingly less but with such a plane the front cockpit could be fitted up exactly as the bomber's cockpit on the new type twinengine bombers being built experimentally

by the Air Corps.

The Heinkel Model HD-20 was designed by Dr. Ing. Ernest Heinkel and built at the Heinkel Flugzeugwerke at Warnemunde. For a two-engine airplane primarily intended for freight and passenger work, it is especially maneuverable; in fact it can be stunted like a sport plane.

The machine is a sesqui-plane and the wings have the pronounced stagger characteristic of Dr. Heinkel's design. The plane is equipped with land type landing gear but attachment fittings are provided for the installation of twin floats for operation on water. The fuselage is built up on steel tubing with the conventional four longerons and is covered with doped fabric. As it is intended for photographic work, which requires that the observer have unobstructed vision forward on both sides and also slightly to the rear, the observer's seat is placed forward of that of the pilot.

The power plant consists of two American Wright Whirlwind engines of 200 h. p. each. Either motor complete with its oil tank may be removed readily by disconnecting four bolts. The fuel tanks are located in the upper wing.

The fin is adjustable in flight so that when running on one engine the rudder control will be sufficient to maintain straight flight. The stabilizer is also adjustable from the the plane has a very quick take-off. It lands easily at a low landing speed. The general characteristics are as follows: Span of upper wing......42 feet Span of lower wing..........28 ft. 10 in. Total wing area......428 sq. ft. Climb to 3280 ft. (1000 m.) . . . . 3.5 minutes Climb to 6560 ft. (2000 m.)....7.5 minutes Climb to 9840 ft. (3000 m.)....13 minutes Climb to 16400 ft. (5000 m.)...35 minutes Endurance...... 3 hours 

pilot's seat. Due to the light wing loading.

### NOMENCLATURE FOR AERONAUTICS

THE nomenclature for Aeronautics presented in report No. 240 is a revision of the last previous report on the subject (No. 157), which was issued in February, 1923

This Nomenclature for Aeronautics was prepared by a special conference on aeronautical nomenclature authorized by the executive committee of the National Advisory Committee for Aeronautics at a meeting held on August 19th, 1924, at which meeting Dr. Joseph S. Ames was appointed chairman of said conference. The conference was composed of representatives of the National Advisory Committee for Aeronautics. and, in response to the committee's invitation specially appointed reperesentatives officially designated by the Army Air Service, the Bureau of Aeronautics of the Navy Department, the Bureau of Standards, the American Society of Mechanical Engineers, the Society of Automotive Engineers, and the Aeronautical Chamber of Commerce.

This report supersedes all previous publications of the Committee on this subject. It is published for the purpose of securing greater uniformity and accuracy in the use of terms relating to aeronautics, in official documents of the Government and, as far as possible, in technical and other commercial publications.

A copy of Technical Report No. 240 may be obtained upon request from the National Advisory Committee for Aeronautics, Washington, D. C.

#### TO BERMUDA BY AIR

THE Bermuda-New York Air Transportation Co., Ltd., plan to start a biweekly air service line from New York to Bermuda within the next few months, which will reduce the travel time to Bermuda to seven hours.

Philip Manson, president of the Pacific and Eastern Steamship Company, is chiefly responsible for the new concern. Other members of the incorporation are G. C. G. Montague, R. A. Ferguson, and O. W. Kealy of Bernuda.



The German Heinkel photographic plane with two Wright "Whirlwind" engines.



Travel Air Mfg. Co. is indebted to Mr. P. T. Wilson, of Somerville, Mass., for the kind, unsolicited letter printed below.

### Thank you, Mr. Wilson—

Travel Air Mfg. Co., Wichita, Kansas.

Dear Sirs :-

Somerville, Mass., November 2, 1926.

I have recently flown from Los Angeles to Boston in an OX5 Travel Air. I wish to commend you upon the fine performance of the Travel Air. We flew 3325 miles and had no trouble. Our flying time was 44 hours. The gas consumption was 7.5 gal. per hr.

We got out of a very wet field at Lordsburg, N. M. (elev. 4500 ft.) without difficulty. Many OX5 jobs have cracked up at Lordsburg even when the field is dry and I recall a few cases where larger planes have found it hard to get out of.

We were caught in a 100 mile line squall 100 miles north of Dallas and the plane acted very stable. Again, we met rain and lightning between Cincinnati and Dayton and the plane performed remarkably.

I would recommend the Travel Air to anyone who desires a plane for transcontinental flying where all kinds of fields and air are met. It performs equally well in the north and south and the east and west. We were flying below sea level over the Salton Sea and cleared the southern end of the Rockies without danger.

You are at liberty to use the above testimonial or any part of it as you desire for publication or otherwise.

Very truly yours,

(Signed) PAUL THEODORE WILSON,

Mass. Inst. of Tech. '27.

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#### POLAR PLANE AT ST. JO.

THE Josephine Ford and her crew who made a tour of the United States in the interests of commercial aviation, financed by the Daniel Guggenheim Fund, received an enthusiastic greeting at St. Joseph, Missouri. Major Stigall headed the welcoming committee consisting of Carl H. Wolfley, Harry Block, A. R. McGinnis, L. B. Clough, C. H. Hellums, G. L. Low, W. F. Kimball, M. V. Ulschmidt, W. E. Royse, R. R. Calkins, S. A. Moore, Harry McPherson and W. L. Connett.

### VIRGINIA TO FOSTER AIRPORTS AND AIRWAYS

B USINESS interests in Virginia have air transportation facilities, as evinced there at the autumn meeting of the Virginia State Chamber of Commerce's Directors. At this meeting resolutions were adopted calling upon the Virginia General Assembly to "pass such legislation as may be necessary to authorize the citics, town and counties of Virginia to acquire by purchase or otherwise, suitable property to be developed, maintained and used as aerial landing fields and for the establishment of airports."

Major LeRoy Hodges, managing director of the Virginia Chamber, recently returned from Europe where he took every occasion to travel by air, and found that the importance of commercial aviation cannot be over estimated.

### THE HANDLEY PAGE "HAMLET" MONOPLANE

THE accompanying drawings and photographs illustrate the general appearance of the latest Handley Page product, the "Hamlet" monoplane. Not only is the whole arrangement original in form but many desirable features for the comfort of the passengers and crew have been incorporated in the design. The four upholstered seats in the cabin are adjustable and a removal table is arranged across the cabin. Silk roller shades and baggage racks on the walls are among the conveniences provided.

Three 120 h.p. Bristol Lucifer engines are mounted on tubular steel supports. Fuel tanks are mounted inside the deep wing adjoining the body, supplying any one or all three engines by gravity feed. The wings are fitted with the Handley Page-Lachmann slotted aerofoil arrangement which may be operated by the pilot to secure greater lift when taking off and in conjunction with the trailing edge flaps for slowing down in landing. The RAF 31 wing curve is used.

The cabin is not large but is roomy and comfortable. The aim has been to provide many appurtenances for convenience, subordinating the idea of weight saving. The cabin is close to the ground when the machine is at rest, and is reached without steps.

 Weight of machine cmpty.....3,105 pounds Weight of instruments and equipment.

| 27                                  | 0 pounds  |
|-------------------------------------|-----------|
| Gasoline capacity                   | 4 gallons |
| Oil capacity                        | 7 gallons |
| Weight of pilot18                   | 0 pounds  |
| Useful load (4 passengers and baggs | age),     |
| 80                                  | 0 pounds  |

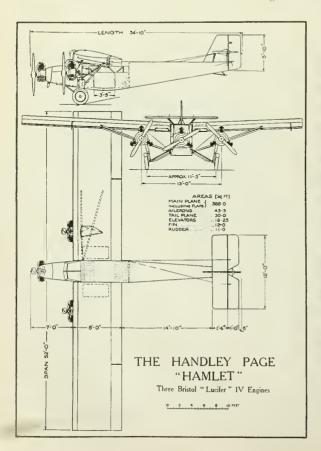
|                               | 800     | pounds |
|-------------------------------|---------|--------|
| Total weight loaded           | 5000    | pounds |
| Wing loading, per sq. foot    | 12.9    | pounds |
| Power loading, per h.p        | 13.9    | pounds |
| High speed118                 | miles a | n hour |
| Cruising speed100             | miles a | n hour |
| Speed with 2 engines running, |         |        |

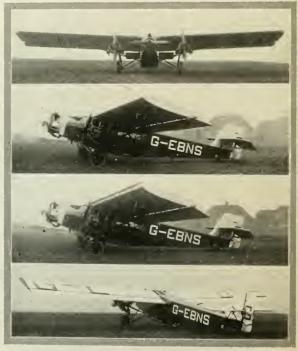
90 miles an hour Landing speed ....... 47 miles an hour

### PROPOSED FINAL DRAFT OF AIR COMMERCE REGULATIONS READY

THE Department of Commerce through its Assistant Secretary of Commerce for Acronautics, William P. MacCracken, Jr., have prepared a thirty-seven page draft, putting into effect the provisions of the Air Commerce Act and have submitted same to those interested in air regulations. The purpose in doing this was to secure further suggestions and recommendations from them before putting these into effect. A copy is on file at the Aero Digest office and may be examined by those who desire to see same.

The preliminary work has been in the hands of Clarence M. Young, Chief, Air Regulations Division.





The Brit'sh Handley Page triple-engine monoplane. It has a thick wing provided with leading-edge slots and trailing edge flaps to assist in quick take-offs and slow landings. In the two center views the slots are shown in open and closed positions. Three Bristol 120 h.p. engines are installed.

#### $\mathbf{D}\mathbf{0}$ NOT READ THIS

list of bargains unless you want to buy airplanes, motors,

list of bargains unless you want to buy airplanes, motors, parts, supplies and accessories. Brand new engines, original crates, motor log furnished in lots of \$8.350; in lots of 10, \$325; government overhauled OX5 engines, lots of \$5.200. Used Curtiss OX5 90 h.p. engines; from \$125 to \$150 according to condition.

Curtiss OXX6 100 h.p. Engines: Brand new motors complete, \$850. Curtiss OXX6 100 h.p. Engines: Brand new motors complete y overhauled OXX6 motor, \$350. Used OXX6 motors, from \$175 to \$300.

Circhiso OxX6 100 h.p. Engines: Brand new motors completely overhauled and in perfect condition, \$975. (These motors have all brand new bearings throughout, new magnetos, new wiring assemblies, new heavystem valves, all new rings, first class cylinder blocks and in perfect condition throughout, Same motors, sit assembled, but furnished with all the new parts and ready for assembly, each \$325. Model I engines, 150 h.p. same prices as model E, either assembled or disassembled. Model A 150 h.p. completely overhauled and in first class condition throughout, \$375.

We have large quantities of model E, 1.6 A engines listed above. Same motors in model A, disassembled, \$375.

We have large quantities of model E, I. & A engines disassembled and sused at lower prices than the ones quoted above, but the prices quoted above are for our best engines. Upper or lower crank case main bearings any station, 80c.; crank shafts, packed two to a box, new, \$7.50. xeve cylinders, \$10; Intake walve, all so and other walve, all so and other walve, all so the solution of the complete sassemble and so the solution of the complete assembly per set, \$200. The complete of the complete sassembly per set, \$200. The complete of the complete sassembly per set, \$200. The complete of the complete assembly per set, \$200. The complete of the complete sassembly per set, \$200. The complete of the complete assembly per set, \$200. The complete of the complete assembly per set, \$200. The complete of the complete assembly per set, \$200. The complete of the c

Brand New Curtiso NX5 Parts:
Upper or lower crank case main bearings any station, 80c.; crank shafts, packed two to a box, new, 87.50; New cylinders, \$10; Intake valves, 30c.; Exhaust valves, 40c.; Intake or exhaust valve springs, 10c.; Connecting rod and cap, 81.50; Connecting rod and cap, 81.50; Connecting rod assemblies, \$2.50; Connecting rod bearing, 50c.; Piston Pins (Standard size only) 50c.; lots of 25 or more, 80c.; Piston rings, 10c.; Cam shaft, \$10. Cam shaft, \$10

Instruments: Large type 5-inch dial Altimeters Tycos and other makes, \$6.50; Small type Altimeters. 4 inch dial, Zenith und other makes, new, \$8; 17-Jewel 8-day airplane clocks, new, \$12; New oil gauges, new, \$8; 17-Jewel 8-day airplane clocks, new, \$12; New oil gauges, new, \$12; New air gauges, \$0.10 lbs., 75c.; New Fahrenheit gauges, complete with any standard length tube, original boxes, \$6.50; New single or double ignition switches, \$1.75; New production type A Johns-Manville tachometer heads, in original factory boxes, \$12; New production Johns-Manville tachometer stafts and cables, \$6; New gas gauges, Jenny, Canuck, or Standard \$5; 2 to 1 reduction Johns-Manville tachometer step-up adapters, \$6; General Electric compasses, \$12; Booster magnetos all makes, ranging in prices, \$8 to \$50; New Simms magnetos for any model flispano Suiza engine, \$20; New Simms magnetos for any model flispano Suiza engine, \$20; New Simms magnetos completely converted ready for installation in OXA6 motor, right or left hand roverted ready for installation in OXA6 motor, right or left hand roverted ready for installation in OXA6 motor, right or left hand roverted ready for installation in OXA6 motor, right or left hand roverted ready for installation in OXA6 motor right or left hand roverted ready for installation in OXA6 motor right or left hand roverted ready for installation in OXA6 motor hipping suits equipped with the electrical heat units fur lined, \$73; Sheep lined, \$60; Navy type flying suits, water proof, heavy lined, \$30; (Zip lasteners) Reclaimed Army heavy cotton flying suits size 36 to 40, \$10; White flying suits, any size, aviation in signia, \$8.50; all makes of oggels from \$2.50 up to the best made at \$7.50.

Miscellaneous: Dope Dope Thiner, Fabric, Tape, etc. Grade A cotton material, \$50 in. wide, per yd., \$60;; 72 in. plain tape, per yd., \$60;; 72 in. plain tape, per yd., \$60;; 72 in. plain tape, per yd.

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Million Dollar School insure you the best, most
practical instruction. Mechanics earn \$50 to \$150
a week. Flyers, up to \$500.

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#### GARRISON AIRPORT

EVANSVILLE, Indiana, now has a first-class airport, including a large hanger for six ships, wind sock, ground wind indicator, white circle, gasoline station on field, repair shop, etc. The name of the port is Garrison Airport. It comprises 75 acres and is located at the junction of the Princeton and Boonville roads, one-half mile north of Evansville.

On top of the hangar there is a 12-foot electric flashing type American flag and two large flood lights for night landing.

Four planes, one a five-passenger, are at the field for aerial photography, instruction and commercial flying service conducted by the operators of the airport. The operators are: Ray Fortner, manager, pilot; Bob Brennan, advertising manager; Lester Kirk, photograph pilot; Floyd Stork, pilot; and Otto Hoover, stunt pilot.

#### TAMPA AIRPORT NEWS

By R. E. BURRITT

T AMPA Airport has made rapid progress in the last few months. Owen H. Pinaire, vice-president of the Tampa Aeronautic Association, and R. Wallace Davis, secretary of the City Commission, deserve a great deal of credit for securing this landing field comprising 240 acres, located on a good highway four miles from the center of Tampa.

The Tampa Aeronautic Association was organized by Owen H. Pinaire and George W. Mitchell, on Armistice Day, 1924. At the regular monthly meeting in October, 1925, the Air Mail committee, which consisted of Elizabeth Barnard (the Post Mistress of the City of Tampa) as chairman, R. Wallace Davis and Owen H. Pinaire, announced that Tampa was to have air mail service between Miami, Fort Myers, Jack-

sonville and Tampa. At the next meeting R. Wallace Davis, chairman of the Airport Committee—the other committeemen being B. L. Hamner and Judge Darlington—told the Association that the airport had been secured. The membership of the Association by this time had grown to over one hundred and fifty.

The Tampa Board of Trade is now organizing a Bureau of Aeronautics with Carl D. Brorein, chairman of this bureau.

#### THE PANDER PLANE

THE Pander type D, built by H. Pander & Zonen of The Hague, has been designed with a safety factor of 7½ in accordance with requirements of the Dutch Technical Air Service. Demonstration flights of the Pander monoplane have been made by a great number of pilots of all nationalities.

The body is of the monocoque oval section built on laminated wood formers. The wing is of the one piece thick section type supported in cantilever fashion.

The gasoline tanks are made of aluminum with a capacity of about 12 gallons. They are easily removable and are located in the wings at either side of the body.

General specifications follow:

| General specifications follow:         |
|----------------------------------------|
| Span                                   |
| Length                                 |
| Chord 5 feet 5 inches                  |
| Weight (empty)420 pounds               |
| Weight of fuel (for 7 hours) 95 pounds |
| Weight of pilot165 pounds              |
| Weight of plane loaded680 pounds       |
| Engine, "Anzani"                       |
| Power loading per h.p20 pounds         |
| Wing area116 sq. ft.                   |
| Loading per sq. foot5.85 pounds        |
| Maximum speed75 miles per hour         |
| Minimum speed31 miles per hour         |

The engine used, the Anzani 3-cylinder air-cooled type, delivers 25 h.p. at 1700 r.p.m. The engine weight is about 115 lbs. Fuel is consumed at the rate of 1½ gallons of gasoline an hour.

#### DINNER IN HONOR OF SIR ALAN I. COBHAM

SIR ALAN J. COBHAM, the English aviator, who recently flew to Australia and return to London, 28,000 miles, was the guest of a honor at a banquet which was given by the Aeronautical Chamber of Commerce at the Waldorf-Astoria Hotel on November 29.

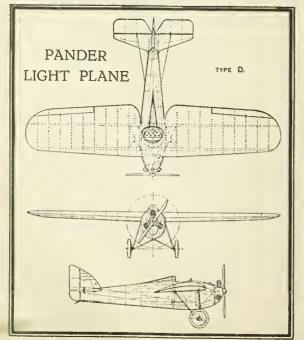
The toastmaster was Col. Paul Henderson, president of the Chamber and general manager of the National Air Transport Corporation. Col. Henderson was formerly Second Assistant Postmaster General.

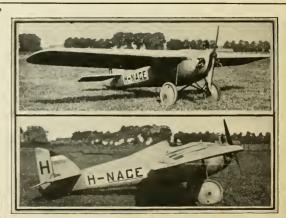
### E. N. GOTT VICE-PRES. OF HUFF DALAND CO.

THOMAS H. HUFF, president of the Huff Daland Airplanes, Inc., of Bristol, Pa., has resigned as the active directing head of that organization. His office will be taken by Edgar N. Gott, who until his appointment to the present position was vice-president of the Fokker Aircraft Company of Hasbrouck Heights, N. J. Mr. Gott also assumes the office of general manager.

At the same time it was announced by the stockholders of the Huff Daland Company that new capital had been authorized and subscribed bringing the total capitalization to more than one million dollars. An increase of capital has already been made with the issuance of 4,000 shares of preferred stock and 4,000 shares of common stock with no par value. This stock was over-subscribed at the special meeting of the stock-holders, held in the executive offices of the corporation in New York.

Mr. Gott comes into his new office with full knowledge of the aircraft business. He has spent many years in furthering aircraft activities, and is therefore exceedingly well-equipped to assume the principal office in one of the leading airplane factories in the United States. Before he became connected with the Fokker company he was president of the Boeing Airplane Company of Seattle, Wash. He is particularly well-known in aviation circles on the Pacific Coast as well as in the East.





The Type D light plane of the Pander Aeroplane Works.

#### THE ASPA EXPANDS

ORGANIZED in 1924 and incorporated in 1925 with the stated purpose of "arousing and maintaining interest in aviation, as our strongest arm of national defense", the ASPA, or the American Society for Promotion of Aviation, has, by its consistent work, become a factor in the aeronautical life of America. Aside from the dollar membership which covers the cost of their silver winged emblem, the society has carried on its work without financial assistance.

During 1925 over eighty lectures on the subject of aviation were arranged and given by members of the society, and various publicity efforts for the cause of aviation were carried through.

In conjunction with the American Legion Post of New Milford, Conn., they secured a splendid landing field for that city. Members have offered their services as aviation advisers for Boy Scout troops in their locality. Here is a splendid opportunity for every airman to make practical use of his air training. One night a month with the Boy Scouts would do much to build up an aviation spirit which will develop future American pilots.

A prize of \$1,000 has been offered to any boy or girl under eighteen years of age who flies from San Francisco to Boston in competition and under rules outlined by this society. Over a dozen entries have been received and an offer of additional prize money has been made. To further a knowledge of the fundamentals of aviation, there has been arranged a Home Study Course in avia-

The plan of organization calls for National Headquarters, Regional Wings, State Squadrons and Local Flights. In this manner the skeleton of a military flying organization is formed. It is hoped that the next few years will see the formation of flying clubs in every moderate sized community in this country. When that is accomplished we will be well on our way to "Make America Supreme In The Air."

#### GARY, INDIANA, NOTES

THE Gary Flying School Field is located between Gary and Crown Point, lndiana, and is exactly five miles due north of Crown Point on the southwest corner of the intersection of two concrete roads. Standard Oil Company aviation gasoline and oil are always kept on hand. Interurban car service takes passengers from the entrance of the field to Gary or Crown Point. The field itself covers 115 acres and although it is slightly rolling and a little rough it is dry at all seasons of the year. When the air mail line between Chicago and Indianapolis is started this field will be very convenient to it as well as it is to the present Transcontinental route and the Ford

The school reports a very good year. The following have made their solo flights within the last month: Al Crouse of New Jersey, W. McMahon of Gary, Ind., R.

McClenaghan of Lakewood, Ohio, and Harry Atkinson of Windber, Pa. The last two have taken their F. A. I. certificates. Russell Hankfort of Chesterton, Ind., and George Austgen of Schererville, Ind., who were trained at the Gary Flying School, are now flying their own ships. Several new students have recently enrolled, including Raymond Bader of Galens, Ill. Elmer Martin of Steubenville, Ohio, has been taken on as assistant. Bill McMahon made several cross-country trips in the Eaglerock, preparatory to leaving for Denver to fly back his new Eaglerock which he has purchased through Captain J. A. Yonge.

#### STOUT AIR SERVICES REDUCE AIRLINE RATES

A IRLINE passenger rates have been reduced on the Detroit-Grand Rapids line operated by the Stout Air Services, Inc. The former round trip fare of \$42 has been reduced to \$35 and the former one way fare of \$25 reduced to \$18. The commutation books, good for ten one-way rides, will continue to cost \$160. The new fares are based on a rate of 14 cents a mile, approximately the same mileage rate charged by the London-Paris airlines which are supported by government subsidies.

Daily service (except Saturday and Sunday) is maintained departing from Dearborn at 9:00 a. m. and from Grand Rapids at 2:30 p. m.

### Home Study in Aviation

A BABY CREEPS, BEFORE IT WALKS, and before a person attempts to fly, he or she should have a thorough knowledge of the fundamentals of aviation.

aviation. It is with this idea in view that The American Society for Promotion of Aviation has arranged its home study course. The caurse has been arranged by men of actual flying experience; is based on lessons taught by the Army Air Service, and the experiences of men in the air.

of men in the air.

The course covers EARLY HISTORY OF AVIATION—GLIOING—THE WRIGHT BROTHERS AND EARLY AVIATION IN AMERICA— TYPES PAST AND PRESENT—BALLOONS AND OIRIGIBLES—TYPES AND OIVISIONS OF TYPES—COMMERCIAL FLYING—FUNOAMENTALS OF THE SCIENCE OF FLIGHT—RELATIVE MOTION—NEWTON'S LAWS OF MOTION—NATURAL STABILITY—CENTER OF PRESSURE AND CENTER OF GRAVITY.

THE AEROPLANE IN GENERAL—TYPES AND PARTS—WING STRUCTURE—BOOY STRUCTURE—STABILITY—NOMENCLATURE—STREAM-LINING.

TURE—BOOY STRUCTURE—STABILITY—NOMENCLATURE—STREAM-LINING.

ASSEMBLING — ERECTING — ALIGNING — ANGLE OF INCIDENCE— TURNBUCKLES—CARE OF AIRPLANES, TOOLS AND HANGARS— TRUEING UP PLANES—COVERING AND OOPING—ADJUSTING OF AILERONS AND FORE AND AFT BALANCE—CHECKING ALIGN-MENT OF FUSELAGE—PROPELLER TORQUE—NOTES ON WOOD SPLICING.

INTERNAL COMBUSTION ENGINE—CARBURETORS—MAGNETOS— LUBRICATION—TROUBLE SHOOTING.
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#### N. A. T. EXPRESS

HOWARD E. COFFIN, president of the National Air Transport, Inc., in announcing the signing of the two contracts with the American Railway Express Company, said:

"The establishment of this business relationship between the American Railway Express Company and the National Air Transport, Inc., marks the consummation of negotiations which have been in process since March, 1925.

"When the Air Transport Company was formally organized in May, 1925, announcement was made that among its principal objectives was the institution of an Express Scrvice between New York and Chicago. Later, when the company undertook the Air Mail Service from Chicago to Dallas, this route also was brought into the Express plan.

"The signing of these contracts thus marks the culmination of many months of experiment, of organization and of cooperative effort to this end.

"It marks also a long step forward in the firm establishment of that privately owned and operated commercial air transport which is the professed object of all the air legislation which has been enacted in 1926.

"On the first of May this year, the first link of the system was inaugurated, carrying the air mail between Chicago and Dallas. The record of this line has been very satisfactory to us. It has flown approximately three hundred and fifty thousand miles without an accident. It has completed ninetyeight and two-thirds percent of its scheduled mileage. It has maintained its time schedule at nine-two percent. It has lost no mail and injured no people. It has had only one mechanical forced landing for each eighty-five thousand miles of flying and its total damage to its aircraft through such forced landings has been less than six hundred dollars."

#### SIKORSKY'S NEW PLANT

THE Sikorsky Manufacturing Corporation on November 15th, leased the major part of the assembly building of the former L. W. F. Aeroplane Company, located at College Point, Long Island. For the present they will use a space of 22,000 sq. ft. with the option of increasing this space to 40,000 sq. ft.

The former L. W. F. plant is one of the best and largest airplane factories in the country, the assembly building being 700 ft. long, 100 ft. wide and 35 ft. high. The factory is located on the East River and has a water front from which seaplanes or amphibians can be launched. Land planes can be put on barges and transported to a nearby field adjoining water. Arrangements have been made for the use of the former L. W. F. Company's machine shop, located on the premises. This shop is equipped with modern machinery for all kinds of mechanical work

After moving to the new location the Sikorsky Corporation will start immediately on the construction of another three-motored plane, a duplicate of the late S-35, and a series of twin-engined amphibians and land "MATEDIALS

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three most popular models:

FOKKER North Pole Plane: 3 ft. size
Complete Construction Outfit
De Havilland World Flyer: 3 ft. size
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JND-2 Curtiss Plane: 3 ft. size
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#### SCHEDULES CHANGED ON AIR MAIL ROUTES

THE Northwest Airways, Inc., which took over from Charles Dickinson the operation of the Chicago-Minneapolis route (C. A. M. 9) on October 1, have eliminated the westbound Monday and the Saturday eastbound trip. The following schedule is now in effect: Leave Chicago, 5.50 a. m.; leave Milwaukee, 6.50 a. m.; leave St. Paul, 10.30 a. m.; arrive Minneapolis, 10.40 a. m. Leave Minneapolis, 2 p. m.; leave St. Paul, 2.10 p. m.; leave La Cross, 3.30 p. m.; leave Milwaukee, 5.25 p. m.; arrive Chicago, 6.15 p. m.

The Colorado Airways, Inc., operating the Cheyenne-Pueblo route (C. A. M. 12), have changed their schedule as follows: Leave Cheyenne, 5.30 a. m.; leave Denver, 6.55 a. m.; leave Colorado Springs, 7.50 a. m.; arrive Pueblo, 8.30 a. m.; leave Pueblo, 2.30 p. m.; leave Colorado Springs; 3.20 p. m.; leave Denver, 4.30 p. m.; arrive Cheyenne, 6 p. m. Same frequency as heretofore.

The Ford Motor Company's Detroit-Cleveland route (C. A. M. 6) schedule has been changed to the following: Leave Detroit, 10.40 a. m.; arrive Cleveland, 12.10 p. m.; leave Cleveland, 3 p. m.; arrive Detroit, 4.30 p. m. Same frequency as here-

National Air Transport, Inc., have changed their schedule on the Chicago-Dallas route (C. A. M. 3) as follows: Leave Chicago, 5.50 a. m.; leave Moline, 7.20 a. m.; leave St Joseph, 10.20 a. m.; leave Kansas City, 11.18 a. m.; leave Wichita, 1.18 p. m.; leave Oklahoma City, 3.05 p. m.; leave Fort Worth, 5.15 p. m.; arrive Dallas, 5.35 p. m. Leave Dallas, 7.45 a. m.; leave Forth Worth, 8.15 a. m.; leave Oklahoma City, 10.10 a. m.; leave Wichita, 11.57 a. m.; leave Kansas City, 1.57 p. m.; leave St. Joseph, 2.40 p. m.; leave Moline, 5.15 p. m.; arrive Chicago, 7.20 p. m. Same frequency as heretofore.

These schedules were arranged to permit only daylight flying, due to the fact that the airways are not lighted.

#### T. Z. FAGAN VICE-PRES. OF SCINTILLA COMPANY

Z. FAGAN has been elected vice-presi-T. dent of the Scintilla Magneto Company, Inc., Sidney, N. Y.

The sales of this organization have increased steadily since Mr. Fagan joined the company in 1922 as sales engineer.

MISCELLANEOUS"

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Fresh Sweet Florida Oranges \$3 per box of three hundred large size. Sound fruit and satisfaction guaranteed or money back. We pay express charges. A box of these makes an appreciated Christmas gift. Remit with order.

ACME FARMS Gainesville Florida

#### CLEVELAND—LOUIS-VILLE AIR MAIL ROUTE

POSTMASTER GENERAL NEW awarded the contract for carrying the mails by air from Cleveland, Ohio, to Louisville, Kentucky, to the Kaess Aircraft Engineering Corporation of Amityville, Long Island, N. Y. The concern will receive \$2,20 a pound for the service and will be entitled to carry passengers and freight as well as mail matter.

The distance between the two cities is 33° miles each way and in addition to the cities named, the route will serve Akron, Columbus, Dayton and Cincinnati, Ohio.

The company will use twin motor ships of its own construction, the first time that this type of airplane has been employed on a commercial air route in this country.

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B. G. CORPORATION, New York, N. Y., U. S. A.



New commercial plane developed by the Kentucky Airplane Company.

#### NEW ENGLAND NEWS

By DANIEL ROCHFORD

THE United States Coast Guard have opened their own airplane base at Gloucester, Massachusetts, with three planes in service.

At the Boston Airport one of the new Consolidated training planes has been flown this month by the navy. Due to the return of the navy's JN from the Airport to Philadelphia, it is the now the only navy land plane near Boston.

Licutenant Clarence Shankle, instructor to the 26th Division Air Service, National Guard, went by train to Santa Monica, California, late in November and flew back a Douglas O2C to become part of the aircraft at the Boston Airport.

Flying operations at Bethany, Connecticut have shut down for the winter season. The planes of Colonial Air Transport, Inc. make the field enroute between Hadley Field and Boston but no base flying has been carried on during the month.

The Connecticut National Guard Air Service kept up a high average of flying from Brainard Field, Hartford. The Squadron has named its various ships, for example one DH carries the proud title, "Hod Carrier".

A Curtiss two-seater observation plane was flown to Boston November 14th and returned to Washington November 16th. Major Carl Spatz and Major Henry C. Pratt, both of the office of the chief of the Air Corps, flew in it.

College flying clubs were augumented by the formation of one at Tufts College, Medford Hillside, Mass. this month. It was organized through the efforts of Fred S. Ralph of Northeast Harbor, Maine, a senior at Tufts and a graduate of the primary flying course of the naval reserve at Squantum,

#### AMES, IOWA, AIRPORT

THE Gerbracht Aeronautical Corp. have opened their new airport at Ames, Iowa, located just one mile east of the city on both the Jefferson and Lincoln Highways. It is well marked for cross-country travelers, large cement circle in the center of the field and the hangar has a fifteen by fifty foot sign, "AMES."

Travel Air ships are used by the Gerbracht Corp and are proving very satisfactory. They report that cross-country flying and passenger carrying from the airport has been very satisfactory. Fifteen student pilots are enrolled.

#### NEW KENTUCKY PLANE

THE Kentucky Airplane Company has recently completed service tests on an experimental ship which has been under development for two years.

The company plans to place two models of this ship on the market in the spring. With this end in view, suitable jigs have been constructed and plans have been completed for shops at the field which will give the company a total floor space of 16,500 square feet.

The Kentucky Airport is at all times available to visiting pilots. It is located two miles directly east of Owensboro. Hangar space, gas, oil, water, and repairs are obtainable at all times.

#### BOSTON AIRPORT NEWS

By G. W. HAMBLIN, JR.

THE Boston Airport Corporation has passed its first milestone, and to celebrate its first anniversary, the first of several hangars being constructed by the Wm. Arthur Co. has been completed. A word of explanation may not be out of place here in regard to the Airport Corporation. "Eddie" O'Toole, vice-president of the present corporation, was active at the port in 1923 when the port was opened. He established a service for visiting flyers, in addition to having a ship or two of his own in operation. In 1925 he organized under the present name, and started to do things on a large scale. The corporation has been assigned as Boston representative for the Travel Air Corporation of Wichita, Kansas, and has sold quite a number of their OX-5 and Whirlwind jobs. There are, at present, five men on the payroll: D. C. Sayre, president; E. T. O'Toole, vice-president; B. F. Billings, chief pilot in charge of field operations; E. L. Connerton, asst. pilot, and Ralph Wickford, asst, pilot and mechanic.

Twenty-seven students are receiving instruction, eight of whom have been soloed. One of the most promising students is Miss Margaret "Peggy" Sheehan, of Manchester, N. H., who was one of the four that flew across the continent as guests of Miss Lydia Pinkham Gove.

A. F. Sullivan, of Beverly, Mass., has purchased a Travel Air from the Boston Airport Corp., and intends to open a flying school in Portsmouth, N. H., in the spring. He has a contract to carry payrolls for a couple of lumber camps in New Hampshire this winter.

About fifty students of Harvard University have formed the "Harvard Flying Club", and have purchased a T. A. from the Airport Corp. R. H. Jackson, of Detroit, Mich., president of the club, is taking flying instruction.

Boston's skyline at night is no longer dark, for a fifty thousand candle-power beacon has been installed on the roof of the Gilchrist Company's building. The light has a twenty-four inch beam, visible for twenty-five miles. On the night of the dedication of the beacon, Billings fitw a Travel Air, and Lieut. Frank Crowley flew an Army Jenny. A good time was had by all.

"Al" Backstrom has been engaged by the Iver-Johnson Sporting Goods house to fly over Boston at night with their name on the lower wing. Twelve spot-lights furnish the necessary illumination.

Eddie Connerton flew down to New York, November 7, with a passenger, and on the trip back, the weather became nasty so he set his ship down in Canton. Capt. Chris. Ford landed in Mansfield on the same day, for the same reason.

One of the students enrolled in the flying school here is Crocker Snow, younger brother of the late "Kick" Snow, "Crock" soloed in less than three hours' flying time. Nearly a record here-abouts.

"Airplane Flys 250 Miles an Hour on Water"—Boston newspaper headline. Hooray! Now the question arises: Why have wings on our racing planes when they can go so fast on the water?

The Army blimp TC-5 paid us a visit in October, with Lt. Eddie Gray of Everett, Mass., at the controls. The ship stayed over night, returning the next day to Langley.

The Air Mail is still carrying on, with 87 per cent of its trips from July 1 to Sept. 30 completed on time.



New hangar and one of the Travel Air planes of Gerbracht Corp., Ames, Iowa.

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#### SPERRY BEACON BEING TESTED

BECAUSE of the power of the light and prominence of the position in which it is being tested, many inquiries have been received by the Sperry Gyroscope Company concerning the character of the light flashing on the roof of their building in Brooklyn, N. Y. These inquiries have been particularly numerous from the downtown sky line section from which this flashing light is plainly visible. The range of visibility to the night airmen is sixty or seventy miles. It has been reported visible to observers as far out on the Island as Garden City. A large quantity of these lights is being supplied to the United States Department of Commerce for installation on the night air mail routes. Mr. Jobson is in charge of searchlight sales work and air route and air field equipment for the Sperry Company.

#### DETROIT NEWS

By Frank Bogart

SO NUMEROUS were the happenings in all phases of Detroit's aeronautical development during November that they will have to be catalogued numerically to make sure that none escapes mention.

- (1) The Stinson Aircraft Corporation completed and delivered to Northwest Airways, Inc., a \$300,000 Michigan corporation. with headquarters at St. Paul, however, three cabin machines, for four persons including pilot, with the mail and baggage compartment built into the fuselage back of the cabin. The pay load of these planes was placed at 700 pounds, but one machine in service on the Florida Airways has carried 1200 pounds much of the time. Bucking the first severe gales and snowstorm from Canada these planes arrived in St. Paul the afternoon of November 1. Among the passengers was William B. Stout, who is secretary of the new operating company. Nine others were carried through from Detroit on the fleet's maiden flight.
- (2) Alfred Verville has withdrawn as vice president and designer of the Buhl-Verville Airplane Company, which has been reorganized as the Buhl Aviation Company and removed to a factory at Marysville, 50 miles from Detroit. Herbert Hughes, government aircraft inspector at a local factory during the war, has been made general manager. The company will continue to manufacture Verville's three-place open cockpit "airster" but indicates it will turn out cabin planes also. At Marysville, C Harold Wills, automobile executive who graduated from the Ford ranks more than 10 years ago, has provided a first-class test landing field, on the bank of the St. Clair river, which makes it available for seaplanes as well, or more likely amphibians. The Buhl interests in Detroit are quite diversified. A number of prominent men in the motor industry have become identified with the aircraft venture. A noted eastern engine builder is here working on a new seven-cylinder radial air-cooled motor of 120 horse, in which it is said Wills and also the Buhls, are interested.



Mr. Jobson tests 24-inch Sperry beacon.

Alfred V. Verville, who came to Detroit in March, 1925, from the civilian engineering section of the Army Air Service at McCook Field, is to remain here and join a new venture,

- (3) Rudolph W. ("Shorty") Schroeder, the first man hired by the Ford Motor Company when Henry Ford decided to enter commercial aviation early in 1925, is the first executive in the aviation division of the company to have his head lopped off. The elongated pilot lost his position as superintendent of the Ford Airport and chief test pilot at the instance of Edsel Ford. It was reported that Schroeder differed in his estimates of the performance that could be expected of the Ford tri-motor transport, when only two of its three motors are working, from the estimates, or at least the expectations, of some other persons. The first three engine plane to be sold has just completed a round trip over the National Air Transport route from Chicago to Dallas. The new shops of the Stout Metal Airplane Division of Ford Motor Company have been in operation since November 15th and the output will be one machine every two weeks for the present. One hundred and fifty men are at work in the shop, on fabricating and assembling tasks. Schroeder has not announced any new connection, but it is believed he will go with N. A. T. He has been succeeded in charge of the airport and Ford air freight lines to Chicago and Cleveland by Edward G. Hamilton, who was test pilot for Stout before the latter sold to the Fords.
- (4) The *Detroit Times* has started delivery of papers to Grand Rapids, second largest Michigan city, by air using the planes of the Stout Air Services, Inc. Grand Rapids, 142 miles from Detroit, will now receive Detroit papers at noon instead of 5 p. m. by rail. The *Times* is believed to be one of the first newspapers in America to utilize air service for regular delivery of its papers. The Stout line has been in operation since August 1, under the general managership of Stanley Knauss.
- (5) Chateau Voyageurs, the club that is developing the 600-acre land and water air-

port on Grosse He in the mouth of the Detroit river, was incorporated November 13 as a nonprofit organization, with more than 100 of the city's most prominent business and professional leaders as life members. Edwin Denby, former secretary of the navy. was made honorary president. In the charter is a clause that the airport with all facilities, including a fine club house, shall be turned over to the government for national defense purposes in event emergency requires. To the facilities will be added an ambitious outlay for the training of pilots. Contracts have been let for the erection of a hangar 180 by 120 by 120, in which will be built the \$300,000 experimental metal sheathed dirigible for the U.S. Navy by the Aircraft Development Corporation.

This airport will open May 1, 1927. Express planes of the National Air Transport. flying at night between New York and Chicago, will touch there after leaving Cleveland, instead of following the present mail route to Bryan, O. The Grosse 1le stop makes the flight only ten miles longer, but brings the service to a community of 2,000,-000 that at present has only stub line connection with transcontinental air service. Postmaster General New has indicated he will approve this route for the mail but leaves it to the choice of the contractor who bids in that part of the route for private operation. In this competition N. A T, is considered to have the strongest opposition from P. R. T.

Regardless of the outcome of this Detroit will have one of the finest airports in the world as well as Ford airport, and the municipal administration is determined to provide another air terminal, probably on Grassy Island, also in the Detroit river but several miles nearer the city than Grosse Ile. The club with sporting and recreational facilities covering the entire indoor and outdoor field is likely to become the mecca of private airplane owners from all over the country.

The rest of this month's budget from Detroit may be briefly disposed of as follows:

Charles D. Williams, Jr., lieutenant in the naval air reserve, is the new president of the Detroit Flying Club which is out for 1000 new members by February.

The University of Michigan reports an enrollment of 350 for the naval reserve aero unit which has been established there by the Navy.

For hangar repairing and field equipment, including night lighting system, the War Department has allotted \$100,000 to Selfridge Field, home of the First Pursuit Group. This is distinct from the appropriations for new permanent quarters for officers and men, which will be built next spring.

Packard Motor Car Company is completing a new shop in which all aircraft motor building will be centered. It is rumored the company is about to offer its engine in the commercial market.

Officials of the Continental Motors are planning a trip in their Fokker airliner to the Pacific Coast in December, as soon as President Ross W. Judson returns from Europe.

#### MILWAUKEE NEWS

BY HOWARD STEELEY

M ILWAUKEE, just now awakening to the great possibilities of commercial aviation, is on the verge of establishing two airports, one for the county and the other for the city both to cover sufficient ground for the use of the largest planes yet designed.

The county is appropriating \$150,000 for its airport, which will be used by the contract air mail service, while the city is yet undecided on the amount it will expend for its field. The county has acquired the property of Thomas G. Hamilton, airplane builder, at Cudahy, six miles southeast of Milwaukee. The city probably will place its airport on the lake front, which in itself will present a most extraordinary scenic center for such an enterprise, bordered by an immense lake shore drive and vast greencovered slopes in the heart of the city.

The Northwest Airways, Inc., of Detroit, a Ford enterprise, which has taken over Dickinson's contract for the Twin Cities air mail route from Chicago, has begun operations with a fleet of Stinson cabin planes. The concern is now assured of an adequate field, which already has been graded.

Captain William Gibson, Canadian war ace, managing director of the Redbat Flying Circus of Toronto, has arrived in the city. Captain Gibson, credited with seven German planes in the war and twice shot down and wounded, will endeavor to establish passenger and training service for the city, bringing his flight of five noted Canadian



The Palmer Building, Atlanta, Georgia.

pilots to Milwaukee in the spring. Captain Gibson has asked that he be leased a part of the county airport for his use, planning to erect one hangar to house his five Bristol Fighters. In addition to passenger flying and training of students the flying circus will engage in exhibition work throughout the territory about Milwaukee.

One of the features of established flying in Milwaukee is the Wisconsin News Air Derby, held each year for Wisconsin pilots only, and offering a cash prize, usually around \$2 000. This year twelve planes participated. Lieut. M. D. Mann, acting air officer of the Sixth Corps Area, assisted by two officers from Chanute Field, were in charge. Dan Kiser and Frank Shoblaska tied for first place.

#### HELPING THE PILOT

C. F. PALMER, president of Palmer, Incorporated, owners of office buildings, has marked the top of his building at 101 Marietta Street, Atlanta, Ga., with the name "Atlanta" together with an arrow, pointing to the municipal landing field located to the southeast of the city. This is an excellent example to follow. If all towns and cities were marked in prominent places it would be of great assistance to flyers and a service to aeronautics.

### ARKANSAS AIRCRAFT COMPANY FORMED

THE Arkansas Aircraft Company, Little Rock, Arkansas, will start production of airplanes in December with H. Morton Cronk, aeronautical engineer, who recently joined the company, as designing engineer.

In addition to manufacturing moderate priced, light, three-passenger planes powered with Curtiss OX-5, 90 horse power engines, the company will operate an aviation school and general aviation service.

The local airport is being used as a landing field and the airplane factory building is located only two blocks from the southwest corner of the field.

J. Carroll Cone is president of the Arkansas Aircraft Company and other officers are: H. L. Remmel, vice-president; W. F. Moody, secretary, and Major Henry Fredeman, treasurer. Members of the board of directors in addition to the officers include Roy L. Thompson and Moorhead Wright.

FLYING SUITS \$\frac{\partial \text{plain}}{650}, \frac{\text{fleece}}{3500}, \frac{\text{fur}}{7500} \]
LEATHER COATS \$\frac{\text{wool lined}}{31850}\$

HELMETS \$\ \mathbb{Plain}, \ \mathbb{Silk}, \ \mathbb{fleece}, \ \mathbb{fur} \ \mathbb{F} \mathbb{F} \ \mathbb{F} \ma

FUR GLOVES \$ fleece and fur \$ 350 to \$ 1250

FACE MASKS leather lined with wool \$150

FLY COMFORTABLY THIS WINTER

AIR TRANSPORT EQUIPMENT, Inc.

CARLE PLACE, L. I., N. Y.

#### FOREIGN AERONAUTICAL NEWS IN BRIEF

#### GREAT BRITAIN

FOR the year ending March 31, 1926, the Imperial Airways has operated the following European services: From May to September, twice daily between London and Paris, London and Ostend, and London, Brussels, and Cologne, and daily between London, Paris, Basel, and Zurich; from October to April, daily between London and Paris, London, Brussels, and Cologne, and London and Amsterdam with connections for Hanover-Berlin, and weekly between Southamoton and the Channel Islands.

During the year the company completed a total mileage of 810,045. Passenger traffic on the continental services terminating at Croydon increased by 59 per cent in the first quarter of the present year over the corresnonding period of 1925. Imperial Airways has increased seating capacity from 6,825 to 10,999, horsepower from 119 to 178, and the paying load from 23,000 to 37,000 pounds.

Passengers increased from 13,478 to 14.675, while mileage decreased from 890,000 to 865-an indication of more economical operation through the use of larger aircraft. Flying for hire or reward showed a remarkable increase, the number of passengers in this branch of aviation being 67,329, the largest on record. In the seven years since May, 1919, there have been carried in air transport flying 67,227 passengers and 1,804.7 tons of cargo; in flying for hire or reward 315.102 passengers have been carried. In the year under review British aircraft carried 11.363 passengers across the Channel. and foreign aircraft 10.391.

Combined imports and exports of general merchandise carried by both British and foreign aircraft also established a record, the figures being 1972,972 pounds as against 1.-328.395 pounds in the previous year.

Twenty Napier Lion engines are in use by the Imperial Airways, and during the twelve months ending 30th September, 1926. these engines covered an aggregate of over 566,200 miles. One engine alone has flown a distance of 44,495 miles. This remarkable mileage says much for the consistent reliability of the Napier Lion engine as well as for the care in maintenance as carried out by Imperial Airways.

NDER the terms of an agreement signed with Imperial Airways in November, 1925, a fortnightly service between Egypt and India, beginning not later than January 1, 1927, is planned. Three-engined machines are to be used, with the idea of the eventual establishment of a regular weekly service. Subsidy is provided to a maximum of £93,600 a year for five years. In the first year of working £1,200 per flight is to be paid for journeys commenced at regular fortnightly intervals and completed within a maximum of five days from Cairo to Basra, up to and including 52 flights. For each flight similarly commenced and completed within a maximum of six days from Pasra to Karachi, £900 will be paid up to and including 26 such flights, while £300 is to be paid for each additional flight from Basra to Karachi, up to and including 52 in all.

Air service between Southampton and Cherbourg in connection with the sailing of the trans-Atlantic liners is planned by Imnerial Airways, to commence early next year. Twelve-seater Supermarine "Swan" flying boats will be used.

THE route of the two civilian flyers, Neville Stack and Bernard Leete, who set out for Australia on November 15, in two Moth planes with twenty-six horsepower Cirrus engines, will take them across France and the Mediterranean, over North Africa, Palestine and the Indian Ocean to Karachi, in India. Stack is chief instructor of the Lancashire Aero Club and a former Bagdad-Cairo mail pilot. Leete, a member of the club, was in the Royal Air Force during the war, in charge of night bombing. The Air Ministry is permitting the flyers to use all

### Royal Air Force stations in Egypt and Irak. HE Daniel Guggenheim Fund for the THE Daniel Guggerment Promotion of Aeronautics has approved a grant of \$5,000 to the Royal Aeronautical Society to enable it more easily to continue its splendid contributions to the aeronautical science of the world.



First Russian-built plane to fly to Rome; the Napier "Ant" flown by Capt. Gromoff.

#### GERMANY

THE Lufthansa, which operates Germany's airlines, now insures each air traveler for \$6,000. The percentage of safety in airplane flights during 1925 was 99.997 per cent. Thus far during 1926 not a passenger has been injured.

A PPROPRIATIONS in the German Federal Budget of 1926 for commercial aviation total 27,100,000 reichsmarks. Of these, the largest item, 8,370,000 reichsmarks, deals with direct subsidies at the rate of about two marks per kilometer from Government to operating concern. The next largest item, amounting to 5,300,000 marks. deals with scientific research.

Contributions by states, municipalities and chambers of commerce, which are considerable and which deal as a rule with matters such as ground work, survey and patrol work, new installations, landing fields and terminals are not included in the

One of the best services in the field of German aviation is that dealing with weather reports, meteorological observations, the study of wind currents, etc. A daily weather map is prepared for the guidance of aviators, which contributes incalculably towards increasing the coefficient of safety in air travel.

F IFTY-SIX regular air lines were operating in Germany in 1925, serving an area of 23,000 kilometers and touching at 61 cities. At the end of 1924 only 12 lines were operating over an area of 7,146 kilometers and touching at 26 towns.

A total of 107,544 seats were available in 1925, of which 55,185 were occupied. In 1924, 24,613 seats were available for passengers and 13,422 occupied. In 1925, 1,016,600 kilograms of postal goods, freight and baggage were carried, compared with 202,206 kilograms in 1924. The total distance flown in 1925 was 7,534,756 kilometers while during the previous year the distance flown was 3.006,602 kilometers.

THE Lufthansa plans to keep service open during winter for the first time, flights having heretofore been discontinued in December and resumed in April. This winter 28 air lines will be operated in Germany, and they will cover approximately 7,000 miles of routes. This step is part of a campaign to increase the amount of freight carried by air. Traffic in passengers and mail is satisfactory, but freight traffic lags behind.

The planes to be used arc six to ten passenger Junkers limousine monoplanes, heated with hot water radiators, using heat from the motor exhaust.

The price of the various flights has again been lowered for the winter flying and the rate now is slightly less than the first class railroad fare. Each passenger is allowed from ten to fifteen kilograms of baggage free of charge.

#### FRANCE

WORLD'S records are being beaten these days so fast that it is hard to keep track of them. The Arrachart brothers had hardly left on their return flight from the Persian Gulf back to Paris, when another French airplane, piloted by Captain Girier, with Lieutenant Dordilly as navigator, beat their performance. These two flyers made a non-stop flight from Paris to Omsk, Siberia, on July 14-15, covering 2,937 miles in 29 hours and thus beating the Arrachart brothers' performance, by almost 187 miles. Their plane was a standard French Army biplane of the Breguet 19 type, used for corps observation work.

On September 1, further laurels were added to France's aviation accomplishments. when Lieutenant Challe and Captain Weiser broke the world record for continuous flight in a straight line by flying from Paris to Bender Abbas, Persia, a distance of 3,229 miles. They were in the air continuously for 27 hours 20 minutes. This flight beats by 310 miles the flight from Paris to Omsk, Siberia, made by Girier and Dordilly. The plane used on this remarkable flight was a Brequet XIX with Farman motor.

M. Callizo, on August 23, broke his own world's record of 39,586 feet (12,066 meters) by reaching a height of 41,994 feet (12,800 meters). He again broke his own record, on August 30, with an altitude of 47,370 feet (14,442 meters).

THROUGH the European Technical Assistant John Jay Ide of the National Advisory Committee for Aeronautics, we are advised of the results of the French Pursuit Airplane Competition which has been held at Villacoublay during the past year and now completed. The performances shown were at 5000 m. altitude:

| Airplanes<br>(Manufacturer's Model<br>Number) | Weight<br>loaded<br>(kg.) | Time<br>of<br>Climb pe | (km. |
|-----------------------------------------------|---------------------------|------------------------|------|
| Nieuport-Delage 42                            | 1808                      | 14'-34"                | 249  |
| Gourdou-Lessesure 32                          | 1376                      | 13'-24"                | 236  |
| Dewoitine D-12                                | 1636                      | 14'-14"                | 233  |
| Spad 61-5                                     | 1631                      | 13'-16"                | 231  |
| Nieuport-Delage 46                            | 1791                      | 15'-15"                | 248  |
| Dewoitine 9                                   | 1491                      | 14'-58"                | 232  |
| Spad 51                                       | 1409                      | 14'-54"                | 228  |
| Gourdou-Lesseure 33.                          | 1548                      | 15'-59"                | 233  |
| Spad 61-3                                     | 1563                      | 15'-12"                | 211  |
| Nieuport-Delage 44                            | 1722                      | 15'-34"                | 227  |
| Wibault 7                                     | 1444                      | 15'-17"                | 221  |
| Hanriot                                       |                           | 16'-40"                | 207  |

Four different engines powered the 12 planes: The Nieuport-Delage 42 and 46 and the Spad 61-5 planes were equipped with Hispano Suiza 450 h.p. engines. The Gourdon Lesseure 32, Dewoitine 9, Spad 51 and Wibault planes had 420 h.p. Jupiter engines. The Dewoitine D-12, Spad 61-3, Gourdou-Lessesure 33, and Nieuport-Delage 44 were equipped with Lorraine 450 h.p. engines. One plane, the Hanriot, was powered with a 500 h.p. Salmson engine.

THE International League of Aviators, the president of which is Clifford B. Harmon, offers free lessons in foreign languages to members at their headquarters at the Clos Normand in the Bois de Boulogne,

THE Tenth International Aeronautical Exposition will be held December 3-19, 1926, at the Grand Palais, Paris, under the auspices of the French "Chambre Syndicate des Industries Aeronautiques." An executive committee, headed by Louis Breguet, president of the chambre, is in charge of arrangements.

THE Committee of Bibliography and History of the Aero Club of France will award four medals annually for the best literary work dealing with the following: (1) For the best work on technical aeronautics. (2) For the best work on popular aeronautics. (3) For the best aeronautical literature, either imaginative or historical. (4) For the best work on aeronautics in a foreign language. Authors must send two copies of their entries to the Aero Club of France, 35, Rue Francois, Paris, before De-

THE fusion of Air-Union and Aero-Navale, which took place July 21, will permit the carrying out of plans for a single line touching London-Paris-Lyon-Marseille-Ajaccio-Tunis. The Air-Union operates the line Paris-London-Marseille, and is one of the largest of the French air companies. The Aero-Navale has been comparatively small, operating seaplanes over the Mediterranean from Antibes to Ajaccio, Corsica. Flying time from London to Tunis will be 14 hours, compared with a train-and-boat schedule of 4 days.

HE installation of radio telegraph or telephone apparatus on French passenger planes is ordered in a recent decree of the French government.

#### JAPAN

THE Japanese Government has announced its intention, by the inclusion of items in the next year's budget, of spending approximately 22,000,000 yen (about \$10,500,000) over a period of seven years in promoting commercial aviation.

The plan calls for the formation of an air transportation company, capitalization of which is to be subscribed entirely by individuals.

FOR the next fiscal year 11,200,000 yen (about \$5,600,000) is requested for opening air routes and subsidizing air transportation companies. The plan is to open air

routes between Tokyo and Dairen in South Manchuria, Osaka and Shanghai, and Tokyo and Sapporo in the Northern Island of Japan.

THE Japanese Admiralty has bought a fleet of the latest type British Blackburn-Napier torpedo airplanes. The planes can be used for land work or as seaplanes. They are designed to dive toward an enemy ship at 150 miles an hour, discharging torpedoes when a few feet above the water and then coming upward almost vertically out of the range of machine guns.

#### MEXICO

RRANGEMENTS have been made by A the Mexican and United States Post Office Departments for the use of the air mail service between Fort Worth, Tex., and Chicago, Ill., and use of the transcontinental air service from Chicago to New York City.

Letters from Mexico City will leave that capital at 9 p. m. and will make immediate connection with the airplanes leaving Fort Worth in the morning, three nights and two days after the letter is mailed at Mexico City. Letters from United States will be treated as special delivery on arrival in Mexico with no additional charge.

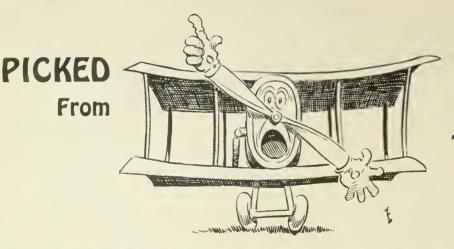
Air mail, express and passenger service will be established soon between Mexico City, Tampico and Matamoros, with an "irregular" service between Ciudad Victoria, Tampico and Tuxpam, by the Compania Mexicana des Aviacion under a ten year contact with the Mexican Government and the Fairchild Aviation Corporation of America, parent organization of the Mexican operating company.

PRESIDENT CALLES has authorized the establishment of a hydroplane service between Vera Cruz and Progreso, Yucatan, with landing places in Puerto Mexico, Frontera, Ciudad Carmen and Campeche. A contract has been made for a route between Mexico City and Vera Cruz and Tampico. Passengers and freight will be carried on all the air lines.

THE Director of the Aviation School of Mexico is perfecting a plan to improve and develop the military aviation corps of Mexico. Pilots must have special training in astronomy, aeronautics, mechanics, mathematics, etc. Also, their flying machines must be of the best and most modern types to insure the safety of the aviators.



The British Napier-engined Gloster "Gorcock" pursuit airplane.



The

AIR

AERO DIGEST will award a prize of \$5 each month for the best joke published. Only jokes pertaining to the aircraft field will be considered. Address the "Picked From The Air" Department, Aero Digest, 220 West 42nd Street, New York, N. Y.

J. N. Lawrence, San Pedro, California, won the prize for November with the following:

 $Air\ Pilot's\ Wife:$  "I'm really worried about my husband."

Neighbor: "Why?"

Pilot's Wife: "He's been trying for a week to lose our cat, and yesterday as a last resort he took her up in an airplane and dropped her over the side."

Neighbor: "Well, why should you worry about that?"

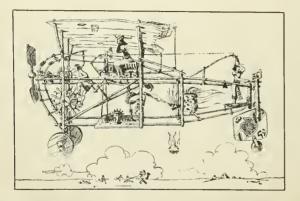
Pilot's Wife: "Lots. My husband hasn't come home yet, but the cat has."

#### New Use for Airplanes

Norfolk, Nebr., Oct. 27.—Christ Lutheran church of this place has installed aeroplanes in all of the pews for the benefit of persons who are hard of hearing. A sensitive transmitter is attached to the preacher's desk, and this picks up the voice of the speaker and also the music.

-Omaha World-Herald.

Could a negro aviator be referred to as an ace of spades?



The Air Services in early days also worked under difficulties. Sketch said to have been found in King Tut's tomb of what is believed to be the first bomber. The ingenious details, smacking of present methods, are worth studying.

#### No Wonder We Didn't Win!

In the National Aeronautic Association Review, October, 1926, page 155, appears this interesting announcement on our navy equipment for the Schneider Cup races:

"They will fly last year's Curtiss R3C2's. Two have V1400 Curtiss 000 h.p. engines and one a 2A1500 Packard of 000 h.p."

Cy Caldwell says: "The truth will come out. This '000 h. p.' obviously refers to the horsepower of the National Aeronautic Association."

He: "What makes you so flighty?"

She: "I was once engaged to an aviator."

She: "Every time I speak to you, my words remind me of an airplane."

He: "How's that?"

She: "Why, they go through space."

-Stephen Lucia.

Pilot: "What part of your new experience did you enjoy most?"

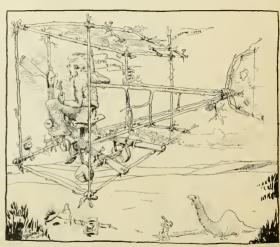
Boy: "Telling the crowd about it after we taxied in."

-James C. Dempsey.

College Boy: "Father, may I have \$2000 to buy an airplane?"

Father: "Do I look crazy? Ask your mother."

-Stanford Chaparral.



-The Leatherneck.

The first Marine Corps airplane.

### Begin to Cultivate 1927 Aircraft Business Now

HE trail is blazed for the most profitable year in aircraft history. Each year has shown an ever increasing growth in the aircraft industry.

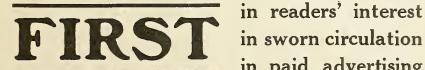
Evidence of the past year's progress is reflected in the growth of AERO DIGEST both in sworn circulation and paid advertising.

A building program requiring the purchase of millions of dollars worth of aircraft, field equipment, factory equipment and hundreds of other items is well under way.

AERO DIGEST is read every month by the men who are building and operating American aircraft and airways. Orders for equipment are placed on their recommendations.

Begin now to create a demand for your products in the aircraft industry.

### ATERO DIGEST



in readers' interest in paid advertising

AERO DIGEST, 220 W. 42nd Street, New York, N. Y.



# Everything in Rubber for the Airplane

The Goodyear Tire & Rubber Company, Inc. Akron, Ohio

### LEARN TO FLY

Our students are taught to fly in new ships! We use WACOS only.

More commercial pilots fly WACOS than all other airplanes.

#### AMERICAN AIRCRAFT CORPORATION

935 Van Nuvs Bldg.,

Los Angeles, Calif.

Hangars at Clover Field

DEALERS!-Write for WACO Franchise



#### STORY OF THE FIRST FLIGHT

(Concluded from page 425)

They hung out the signal for the men of the Life Saving Station. They thought that by facing the flyer into a strong wind, there ought to be no trouble in launching it from the level ground about camp. They realized the difficulties in flying in so high a wind but estimated the added dangers in flight would be partly compensated for by the slower speed in landing.

A track was laid on a smooth stretch of ground about 100 feet north of the new building. The biting cold wind made work difficult and they had to warm up frequently in their living room, where there was a good fire in an improvised stove made of a large carbide can. By the time all was ready, J. T. Daniels, W. S. Dough and A. D. Etheridge, members of the Kill Devil Life Saving Station, W. C. Brinkley of Mateo, and Johnny Moore, a boy from Nags Head, had arrived.

They had a hand anemometer with which they measured the velocity of the wind. Measurements made just before the first flight showed velocities of 24 to 27 miles per hour. The records of the Government Weather Bureau at Kitty Hawk gave the velocity of wind between the hours of 10:30 and 12 o'clock, the time during which the four flights were made, as averaging 27 miles at the time of the first flight and 24 miles at the time of the last.

Wilbur, having used his turn in the unsuccessful attempt on the 14th, the right to the next trial now belonged to Orville. After running the engine a few minutes to heat it up he released the wire that held the machine to the track, and the machine started forward into the wind. Wilbur ran at the side of the machine, holding the wing to balance it on the track. Unlike the start on the 14th, made in a calm, the machine now facing a 27-mile wind started very slowly. Wilbur was able to stay with it till it lifted from the track after a 40-foot run. One of the Life Saving men snapped the camera for them, taking a picture just as the machine had reached the end of the track and had risen to a height of about 2 feet. The slow forward speed of the machine is clearly shown by Wilbur's attitude. He stayed along beside the machine without any effort.

The course of the flight up and down was exceedingly erratic, partly due to the irregularity of the air, and partly to lack of experience in handling this machine. The control of the front elevator was difficult on account of its being balanced too near the center. This gave it a tendency to turn itself when started, so that it turned too far on one side and then too far on the other. As a result the machine would rise suddenly to about 10 feet, and then as suddenly dart for the ground. A sudden dart when a little over a hundred feet from the end of the track, or a little over 120 feet from the point at which it rose into the air, ended the flight. As the velocity of wind was over 35 feet per second and the speed of the machine over the ground against this wind 10 feet per second, the speed of the machine relative to the air was over 45 feet per second, and the length of the flight was equivalent to a flight of 540 feet made in calm air. This flight lasted only 12 seconds but it was nevertheless the first in the history of the world in which a machine carrying a man had raised itself by its own power into the air in full flight, had sailed forward without reduction of speed, and had finally landed at a point as high as that from which it started.

#### A NOD AND A WINK

(Continued from page 433)

little Beppo, the baby hippopotamus—and the other night Beppo rolled over on Jim. George McLaughlin bunks in with wee Hector, one of the calves; though when the weather gets real cold I don't think Hector is going to throw off enough heat to keep Mac warm—he tells me he's considering moving over with Fatima, the camel. And, to be perfectly candid with you, I'm souring on Chesterfield, and am going to crawl in with Archibald, the targe lion. I understand they feed Archie meat every morning. And I'm getting very tired of eating Chesterfield's hay.

A THRILLING bit of law-enforcement gnus comes zipping over the wires from the Christian town of Dearborn, Michigan, center of the old inn business of the country. State police seized an airplane loaded with fourteen cases of whiskey in the sacred hangars of the Ford Airport, proving again that virtue ever triumphs over vice. That is not the first airplane with hellish likker aboard that has sheltered for the night in the chaste seclusion of Henry's hangar. On the last year's Ford Tour my plane crouched there, a sorry contraption skulking among more noble vehicles, with three good quarts of Scotch hidden in the tool-kit. And they were not discovered, proving that the devil looks after his own—for which beneficence we give thanks to Allah and pass on to the next item.

THE awful predicament of an intrepid birdman, and the terrible menace of air travel to the internal organs, are dealt with candidly in the following testimonial which I have taken from an advertisement in *Collier's*, the National Weekly, for October 2, 1926:

"'I was an aviator for three years. You can imagine that it was a pretty hard life. The food generally was not of the best and was usually gulped down in a hurry. I became constipated and my face broke out in large blotches . . . I commenced taking two cakes of Fleischmann's Yeast a day. I had no more trouble. My face cleared and my constipation became a thing of the past.'

Alfonzo Gomez Izquierdo, San Francisco, Calif."
In the interest of aviation we must inform this deponent that a rotary motor, using castor oil, also would have solved his problem.

THE gnuspapers report that a Pacific Coast pilot leaped I from his spinning plane and came down safely in a parachute. Only, he forgot something. He forgot to ask his passenger to come along and ride the 'chute too. Well, you know how it is. A man is going some place in a hurry and he simply forgets to invite a friend to go with him. Anyhow, this passenger couldn't have noticed the pilot stepping out, or most likely he'd have lit out too. What he did was to sit right there, wondering idly—as one will, you know-just when the plane was coming out of the spin. And the next thing he knew the Angel Gabriel, who is on the gate up there to keep out gate-crashers, grasped him warmly by the hand and said, "Well, well, if it ain't Jake! How did you enjoy the trip? Come right in-and be careful not to trip over them harps. The boys will leave 'em around.

I reckon anyone who has been left behind in the passenger seat of a spinning airplane deserves to get right in to Heaven without reference to his record. He's suffered enough. But those of us who are still here in this vale of sorrow and Schneider Cups may consider profitably this matter of pilots with parachutes, and passengers equipped (Continued on page 478)

### **OPPORTUNITY**

to buy needed airplane material at remarkable savings in a Johnson December

# SALE

Planes, engines, spares and equipment offered at prices which must move goods you know are reliable.

#### **BARGAINS**

are presented because we require room and money for expanding manufacturing operations, and want to reduce unusually heavy stock. Everything is

#### GOING FAST

Act quickly. All offers subject to prior sale. Wire! Sale lasts through December only. Think of your future needs and

#### SAVE — BUY NOW

It will pay you. Send cash with order—cashier's check or money order. MONEY BACK IF YOU ARE NOT SATISFIED.

#### **ENGINES**

| 1 OX5 brand new (in original box)                    | \$400 |
|------------------------------------------------------|-------|
| 1 Liberty 12, just off block test, perfect condition | 800   |
| 1 Liberty 6, 200 h.p., Delco ignition, complete      | 250   |
| 6 cylinder Benz, 120 h.p                             |       |
| 1 Hall-Scott A5 6-cyl. complete less hub             |       |
| 3 OX-2s as received from the government, each        |       |
| 5 LeRhone 80 h.p., brand new with spares and tools   | 75    |

#### **AIRPLANES**

#### **ENGINE SPARES**

#### AIRPLANE WHEELS

| 28 x 4 brand new latest specification straight-side drop- |         |
|-----------------------------------------------------------|---------|
| center wheel, each                                        | \$21.50 |
| (Note: 28 x 4, 30 x 5, or 32 x 6 tires fit on this wheel  |         |
| 700 x 100 wheels, width of hub 7 in. x 2 in. axle         |         |
| 750 x 125 wheels, width of hub 71/4 in. x 13/4 in. axle   |         |
| 750 x 125 wheels, width of hub 71/4 in. x 21/8 in. axle   |         |
| 36 x 8 Navy spec. straight side 71/4 in. x 21/4 in. axle  | 15.00   |

#### AIRPLANE TIRES

| 26 x 3 new clincher, each                           | \$2.00 |
|-----------------------------------------------------|--------|
| 26 x 3 new mfg. A. S. spec., each                   | 12.00  |
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only with hand baggage and an accident ticket. When and if the pilot leaves a plane it won't do the passenger much good to jump out clinging to his hand-bag. Or even to his ticket. Just picture him doing that—then go get yourself a drink to quiet your nerves. About this special case I know nothing, and pass no opinion. One account said that the passenger had a parachute, but failed to use it. But anyone who tries to form an opinion of an air accident from what he reads in a gnuspaper is crazy. The only certainty is that the paper almost always is wrong on the details. So let's wash this particular case out of our minds and consider the suppositional ones.

Suppose a wing comes off, or is knocked off by another plane—I know they're not supposed to come off, but they've done it. Let's face occasionally unpleasant facts, thus departing from aeronautical tradition for once, eh? Suppose further that it's a large plane, carrying eleven people, a Maltese cat, and a Pekingese poodle. All right, Or all wrong, rather; for off comes aforementioned wing. "Dear, dear," says the pilot, "tut, tut! how annoying!" Now then, what is he to do? He's wearing a parachute, and the passengers aren't. Neither is the cat nor the poodle. Is the pilot to sit there, after the example of a steamship captain, until the last passenger leaves the ship? Suppose the poodle doesn't jump—you know what dumb things poodles are! Or is the pilot to step off and pull the ripcord, leaving the women and children to sink? Speaking now for myself, in the interesting, not to say intriguing, position of that pilot, I am going to step off, praying to God, and to Mr. Irvin, who makes the 'chutes, that everything is going to come out all right. And, folks, there wouldn't be any maybe or perhaps about it. I'd leave that wingless wonder behind so fast that there'd be some question in the minds of the coroner's jury as to whether or not I'd ever been in that ship at all.

In those circumstances I'd figure that anyone without a 'chute, or anyone who had a 'chute and didn't use it, was just plumb unlucky. It isn't as though I could do anything to help them. Of course, I might get under the poodle and thus apply something soft for him to land on. But if I was that soft I wouldn't be much help to him anyway. No, there is one case where I'd leave, and let bad enough fall alone. Indubitably!

Now then, let's suppose a plane burst into flames in the air. I know they're not supposed to, and I haven't yet heard of a modern passenger plane doing it. But I had an old FE2b pusher catch on fire with me in it one night. And an observer sitting right in front of me. It was in 1917, and we were on Zeppelin patrol at Ashington in the North of England, at 36 Home Defense Squadron, during the last war to make the world safe for the profiteers. I was a young pilot in that war, and I'm going to be an old profiteer in the next one. As we grow older, we grow wiser, you know. Anyhow, there we were: two simple young souls and our mothers' pride and joy, floating around at 10,000 feet in one of the feeblest airplanes ever built. That altitude was our limit with a 120 h.p. Beardmore engine-and the Zepps came over at any height up to 20,000 feet. You see, we couldn't have got up to a Zepp even if we'd seen one. We were there only to make the people of England think that they were being protected. Dummies, in other words, to cover up the hopeless inefficiency of the English staff—which was quite as rotten as the American General Staff, rest assured of that. Well, in those days' gasoline flowed from the gravity tank to the carburetor through a rubber hose, not a metal pipe. And it chanced that this

hose cracked and leaked, with the result that free gas ignited from the exhaust pipe, which was right beside the gas line, designers being what they are. The flames climbed nimbly to the gravity tank, which held about ten gallons or so. And we were at 10,000 feet, with no insurance. Now, there is a situation to bid one pause. My observer had no parachute. Should I leap out and leave him to perish? Or should I stick to the ship and try to save his life? Friends, I stuck with the ship and brought that boy safely down to earth. I had no parachute, either!

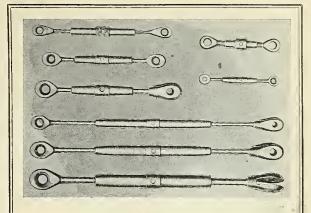
But—but, if I had been wearing a parakeet, where would that poor boy be today? He'd be tuning his harp for the evening serenade. He'd be asking St. Peter to strike A again to make sure he was on the same key as the other boys before they struck up "Roll, Jordan, roll." For he would have gone to his reward that very evening back in 1917, and I would have stepped from my parachute harness and wept over his remains. I admit it. I sat there, with the flames blazing at my back, diving and side-slipping that old Fe faster than ever it went before, and hoping desperately that we would reach the ground before it burned I was cold with fear—and if anyone says that he could have sat there and not been the same way, I wish he'd send me a photograph of himself, marked "Leo, the Lion-Hearted." If I had worn a 'chute, that plane would have been shy one of the crew before it had gone far toward the earth. As it was, stern necessity clamped me to my seat in that flaming near-coffin. Incidentally, when I had dived some few thousand feet, the gas burned out and the blast of air put out the flames, so there wasn't anything to worry about, after all. But how was I to know that? This is a true story, and I may add a maiden to the plot and sell it to True Confessions Magazine one of these days. Lieut. Seymour, now of the Air Directorate, South Africa, was a witness of this, if you need one. He'll be glad to confirm it if you send him a dollar. (Seymour, send me half.)

Now, in the two cases above, here is one pilot who admits candidly, not being a complete but only a partial idiot, that he would have left the ship, passengers or not. And I venture to assert that in like circumstances 99 out of 99 pilots would do the same, unless they were too paralyzed by fright to jump out—in which case they'd die with the ship and be called heroes. And if anyone thinks he wouldn't, all I can say is that either he hasn't experienced the sensations I've been treated to, or else he's a better man than I am, Hunka Tin. No, in events like those nothing but paralysis would keep a parachute-equipped pilot in the plane.

Those cases are such that you might say that the pilot was justified in jumping, even though on a flaming plane the fire might burn out. Remember, I was in a pusher with the flames behind me. In a modern tractor the flames would come back on the pilot. Unless he jumped he would breathe flames and die in the space of time my old fire required to burn out—God bless it! That's my favorite fire—it was so well behaved.

But what are we to say to the pilot whose plane is in a spin from which it shows no least promise of coming out? When he is satisfied that he can't get it out—due perhaps to some breakage of the controls—is he to sit there in the front seat-or is he to jump? Who is to say if he did all that he could? Nobody knows but himself. Others may think that they know, but they don't. There are aerial situations that nobody knows a thing about except the unlucky devil who is experiencing them. I was in an upsidedown flat spin-this was years ago; I had even less brains then than I have now—and the plane, a badly-rigged Avro,

(Continued on page 480)



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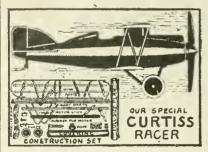
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### PROPELLERS

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went around several times and showed no signs of coming out. If I had been carrying a passenger and had been wearing a parachute, there's another time when a passenger would have been short a pilot. But I had no passengerand no parachute, either. If I'd lit upside down in that thing my head, hard as it may be, would have been cracked like an egg-shell. So I thought, while I hung in my belt calmly and judiciously considering the future of aviation. (If you believe that you'll believe anything.) I don't know if I got the plane out or if I just hung there and let it help itself. I'm sort of hazy about it. I know that I tried the controls every way during one or two turns, and nothing happened. I suppose I kept on moving things, but I wouldn't swear to it. Finally the ship went into a natural spin, and straightened out in a dive—one of the merriest and happiest dives I was ever in. But, while the plane was upside down, with no sign of coming out of the flat spin. ask me, if I had a parachute, would I have jumped and left my passenger behind? You're right! What's the use of asking a fool question like that?

No, let's face the fact that in serious trouble most, if not all, pilots will leave the ship in their parachutes, passengers or not. Some may disagree with me. Let them. When they've stuck to a flaming ship or an uncontrollable ship and brought down their passengers I'll believe them when they tell me that they stuck. And even then I won't be sure why they stuck. Speak up, brave boys, and tell me how you'd act in these cases I've described, allowing that you carried a passenger without a 'chute, and that you had one. Come on, bold lads, and tell poppa what you'd do.

This attitude of the parachuted pilot being so—and I have a most firmly fixed idea that it is so, though of course there will be exceptions—what are we going to do for the passenger? The whole subject is very complicated indeed, and I don't pretend to solve the problem. There are too many people engaged now in solving all our aeronautical and social problems—and their solutions usually are wrong. This is something to tax the ingenuity of the capable Wm. P. MacCracken, Jr., Assistant Secretary of Commerce for Aeronautics. (Ah, there, Bill!—Howdy!) The cussed problem is going to hit us in the face when we carry in commercial airliners all those thousands of passengers we're being told will be fighting for seats.

Are we to give each passenger a 'chute? And if we do, what good is it to him unless we train him in the use of it? And if we explain it to him thoroughly will he leap blithely aboard the ship, crying, "Fly on, brave Captain Mc-Mullin!" Or will he beat it for the humble railroad train? And if they have a 'chute, how many passengers, riding in an airplane for the first time, will know when to jump and when not to jump? You'd have them all so nervous they'd be paraphrasing Shakespeare, "To jump, or not to jump! That is the question!" Some woman would get nervous over a bump, leap out-and every other passenger would follow her. You'd have ships starting off full and landing empty. You'd have to start a bus service to follow along under each plane and pick up the voyagers as they landed in their parachutes. Hang it! You might as well ship them by bus in the first place.

I point this out, lest some quick-thinking genius solve the problem in a second by crying out merrily, "Put parachutes on the passengers!" and then walk off smiling all over his face and thinking that he's a remarkably smart guy. It isn't that easy, brother in adversity. Besides, if you're familiar with parachute harnesses, and recall the neat and nifty manner in which they buckle so snugly

around the extreme northern end of each manly leg, and just south of the appendix, will you kindly advise me how we're going to get them on the ladies? And who's going

to put them on?

Ah, there's the job for a good handy boy around an air station! He's got to be a good boy, mind you! A fellow who doesn't get excited over trifles. A lad with a strong sense of duty, I should say, and good control. Or he'd have to be someone who was immune to charm—some real old fellow like Henry Wacker of the Goodrich Co. Or Bill Arthur or Jack Whitbeck, the hangar hounds. Well, I'm sure I don't know. It certainly is a problem. I'll leave you folks and Bill MacCracken to think it over while I go round to Joe's and buy myself a drink. One thing is certain. I'm not old enough for the job.

#### ITALY WINS SCHNEIDER TROPHY RACE

(Continued from page 427)

team, was even more lugubrious. Cuddihy had learned the treacherous traits of his own plane and knew how to guard against them but he feared the result of putting a new man in the machine. As Armistice Day, the original day set for the race, arrived and the event had to be postponed two days because of bad weather, Admiral Moffett arrived from Washington and took charge, Commander Wick being reported sick with the grippe. Cuddihy was shifted to the all-Curtiss plane and Lieut. Tomlinson was told to take up Cuddihy's ship. He did and the thing Cuddihy had feared happened. Tomlinson turned over in trying to land and was fished out of the bay unhurt but with his plane a hopeless wreck.

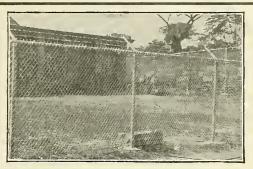
It was no sooner out of the race and Tomlinson assigned to the Hawk than wild stories of the speed it had made began to circulate. Some estimates declared it had gone as high as 285 miles an hour but these subsided gradually to an "official" declaration of 258. After the race the "Packard rooters" were of the opinion that had this ship been in the race the outcome might have been different. But the unbiased ones scoffed at the suggestion anything America had could have touched the speed attained by Major de Bernardi.

What we should have done, they said, was to have built new planes this year which could have captured the cup. Italy last year suffered an overwhelming defeat at Baltimore but her flyers and designers went home undiscouraged. They went with a lot of ideas, too, gleaned from close inspection and photographs of the American and British planes entered in the race. Spurred on by Premier Mussolini, the Macchi Company in five months turned out the winning racers of 1926, a type of plane different from anything they ever before had designed and built.

The ships had monoplane wings like the famed "mystery ship" of the English at Baltimore last year except that the wings, instead of being cantilever, were braced with steel wires. Their wing radiators resembled those used now several years by the Curtiss Company. It was remarked by facetious observers that if there were any defects in the design of the new Macchi racers it was due to movement of the cameras of Muzio Macchi and Mario Castoldi, his chief designer, both of whom were busy lookers-on at Baltimore. But it was admitted they had done a better job than could have been expected in the short time at their disposal and the Americans were particularly amazed at the clean take-offs of the Macchi racers and the obviously low landing speed with which they came back to the water.

(Concluded on page 482)

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of Aero Dicest, published monthly at New York, N. Y., for Oct. 1, 1926.
State of New York,
Ses:

Before me, a Notary Public in and for the State and county aforesaid, personally appeared Frank A. Tichenor, who, having been duly sworn according to law, deposes and says that he is the Business Manager of the Aero Dicest, and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management, etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, embodied in section 411, Postal Laws and Regulations, to wit:

1. That the names and addresses of the publisher, editor, managing editor, and business managers are: Publisher, Aeronautical Digest Publishing Corp., 220 West 42nd St., New York, N. Y.; Editor, J. E. Horsfall, 220 West 42nd St., New York, N. Y. Aricheror, 220 West 42nd St., New York, N. Y. Arimsham, St. Y. State, St. Y. St. Y. State, St. Y. St. Y. State, St. Y. St. Y. St. Y. State, St. Y. St

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#### (Concluded from page 481)

No account of the races at Norfolk would be complete without mention of the efficient handling of the event by the Navy and city officials. Admiral Robert E. Coontz. in charge of the Navy Base, and Commander A. C. Read. who first flew across the Atlantic and now commands the Norfolk air station, saw to it that all details of preparation for the race were carried out and the Norfolk Chamber of Commerce attended to the entertainment end of the affair and the banquet which followed the victory of the Italians.

The usual crowd of faithful and indispensable aviators and aviation enthusiasts were on hand; Casey Jones with his much-autographed flying yest for day wear and a "soup and fish" for stepping out at nights; F. G. Ericson, official referee of the races and custodian of a left-handed corkscrew which puzzled the leading bottle-openers of Norfolk's social set and brought a smile even to the staid features of Frank Russell of the Curtiss Company; Odis A. Porter, with his second-splitting paraphernalia for timing the flyers, and many others not sober enough to mention.

#### "HELL'S BELLS" O'NEIL

(Continued from page 436)

skid, that's all!'

"'You ulcerated pup,' says the instructor. 'You only busted the wing-skid, did you? Well, you'll only be paraded to Squadron Office for jeopardizing government property. That's the only thing that'll happen to you. You'll get C. B. for it or I'm a staff officer.

"'You may be a staff officer,' says Smith, gentle like, 'but if you think I'm going to cough up two pound ten and six for a lost crash helmet on my pay, you're two staff officers!'

"'So for two pounds ten and six you risk three thousand pounds of Government's money, hey?' yells the in-

"'I only busted the wing-skid,' says Smith. 'I might of done more if I'd had time, but if I'd busted the whole damn thing, Government wouldn't of felt nearly as bad as I'd of felt if I'd had to cough up two pound ten and six for that crash helmet!'

"'You tell that to the Major in the morning!"

"Smith shook his head. 'Nope,' he says. 'I gotta surprise for you, Old Timer. You ought to be the first to know it. When I was out in France war-fightin' I got drunk once and I just found out today what happened afterwards. The tailor is sewing up the ribbon now and I'm off to London in a few days for the rest of the show. I guess it'll be damn handy to have the V. C. around this cadet camp, not so? What bus will I break the wing-skid off of next?"

"Well, the instructor looks at Smith's papers and grins sort of sheepish like. Then he looks up at Smith and behaves like a gentleman should.

"'Smith,' he says, 'you have the makings of a fly pilot. Get t'hell into my own bus for the rest of the morning, but if you break a splinter I'll have your heart on the end of a kitchen fork!'

"'Yes, sir,' says Smith, 'I won't.'

"'In that case,' says the instructor, 'I will buy drinks tonight.' And he did. All of which goes to show that even if alcohol is a poison who the hell gives a damn.

"Which reminds me," said "Hell's Bells," "That the

bottle is empty and the Muse revs exactly three hundred.

(Word has just been received that "Hell's Bells" O'Neil has disappeared and James Warner Bellah reports that he cannot locate him but will have more news and some more stories from him inside of a month or two or know the reason why. "Hell's Bells" was last seen in an elevator at the Astor Hotel on Armistice Night after attending the Aviators' Post dinner. At that time, he and the elevator man and the elevator were out of the shaft completely and three stories above the roof looking for a New York Airport. We hope they come back without waiting for the city to establish one! P. S. The elevator man leaves a wife and two children whereas "Hell's Bells" leaves two wives and a hotel bill. Anyone contributing to same will be half-witted.)

#### AIR — HOT AND OTHERWISE

(Continued from page 428)

the fine men in the Services who have had to fight with their teeth and their claws for their honor and the nation's, nearly every advance which has been made in aeronautics in America has been made by private individuals.

Of course if private individuals take hold the bureaucrats will sneer at them and if men in the Service strive unduly they will be subject to court-martial—but, we are glad to know we have good citizens who do not mind a Washingtonian sneer, who even regard it as an honor to be eagerly sought, a martyrdom to be smilingly endured, a sacrifice of self for general good.

The silliest shout of all in Washington is that of the loud voices which proclaim emasculation of American air effort to be admirable economy. The right kind of economy in Washington would cut a hundred millions from the Navy appropriations, where they can do no good whatever to man or beast or long suffering old Uncle Samuel, and pass them along to the Bureau of Aeronautics where they might easily prevent this nation from attack, might preserve it from defeat in case of an attack, giving it the only possible safe harbor on Security Bay and rightful leadership in the Big Parade of nations really worth while.

Keep the money in the Navy. but put that Navy in the air where it belongs. That would be efficiency and it is efficiency which counts today.

#### ACROSS CANADA BY SEAPLANE

(Concluded from page 430)

the seaplane flew to Lac de Bonnet, near Winnipeg, Manitoba, and then on to the Pas, following the waters of the Manitoba Lake.

A stop was made at Prince Albert, Saskatchewan, and when the flight was resumed the scenic Saskatchewan River was followed to the Wabaman Lake, near Edmonton,

Then came the precarious and difficult part of the journey. The aviators left the waterways and made for the famous Yellowhead Pass, which is situated in the heart of the Rocky Mountains, and through which the Canadian National Railway runs its tracks. For five or six hours they were flying surrounded and overtopped by snow caps, over dense forests, and deep ravines, but beautiful flying weather favored them through this leg of the journey.

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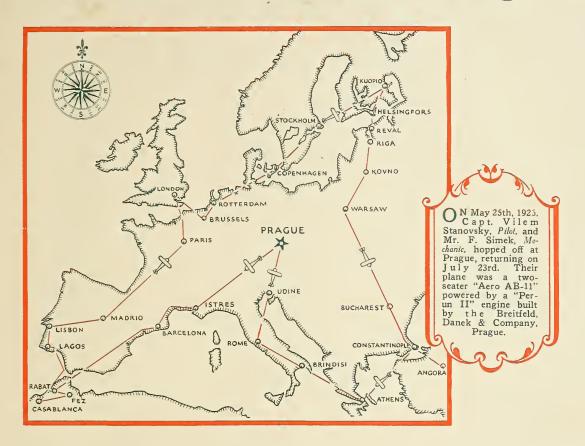
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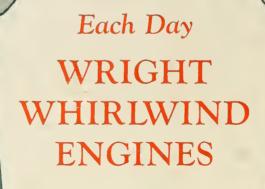


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